

In This Issue—A Bill Fixit Story On Trouble Shooting

MOTOR AGE

Vol. XLVIII
Number 24

PUBLISHED WEEKLY AT 5 SOUTH WABASH AVENUE
CHICAGO, DECEMBER 10, 1925

Thirty-five Cents a Copy
Three Dollars a Year

This is interesting

**At the Automobile Salon
in New York—Rolls Royce
—Mercedes—Le Baron—all
the style boys—showed the
Jordan type of All-Steel,
All-Vision front.**

**Safety—safety—that's the
new thing.**

Edward S. Jordan

President
Jordan Motor Car Company, Inc.
Cleveland

Fleming Electric Drill Tools

now sold through

BLACK & DECKER

The Fleming Electric Drill Tools have all been designed especially for operation with Black & Decker Portable Electric Drills.

The Fleming Electric Drill Tools in the past have been sold only through Jobbers who handle the Black & Decker line.

Because of the close association of the products, each supplementing the other, and because the channels of distribution coincide, arrangements have been made for consolidating the sale of Fleming Electric Drill Tools with the Black & Decker line.

The following are just a few of the operations which can be performed with a Black & Decker Quarter-Inch Electric Drill in connection with the special Fleming Electric Drill Attachments:

Grinding valve seats.
 Cleaning carbon from cylinders.
 Cleaning valve stem guides.
 Cleaning carbon from valves and valve stems.
 Buffing tires and tubes.
 Cleaning cylinder head bolt holes and bushings.
 Removing carbon from valve ports and tops of pistons.
 Cleaning storage battery parts.
 Cleaning welds.
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 Cleaning rust and dirt from brake bands and other parts.
 Removing file marks from aluminum bodies.
 Removing rust and dirt from tire rims, spring leaves, etc.
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 Drilling out storage battery connectors.
 Sharpening drill bits and other tools.
 Saw slotting storage battery plates.
 Cleaning storage battery jar and cover for resealing.
 Cleaning storage battery plate lugs, plate straps, plug terminals and cell connectors for lead burning.

Your Jobber can supply you.

A new Catalog of Fleming Electric Drill tools and many other useful accessories for Portable Electric Drills is now available.

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THE BLACK & DECKER MFG. CO.

Towson, Maryland, U. S. A.

Toronto, Ont.

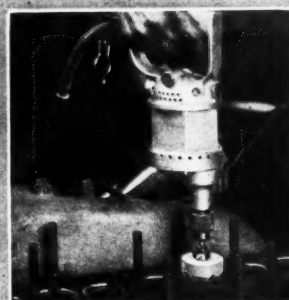
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to any of the Black & Decker Branch Offices listed below.

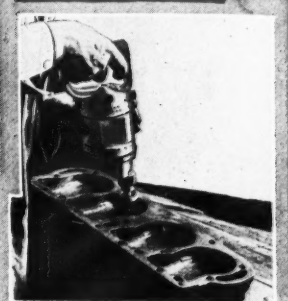
BOSTON, ST. LOUIS, CHICAGO, SAN FRANCISCO, NEW YORK, BUFFALO,
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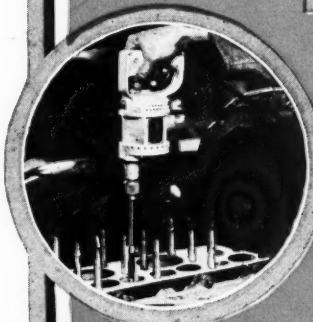
"With the Pistol Grip and Trigger Switch"



Grinding Valve Seats with Fleming Valve Seat Grinder.



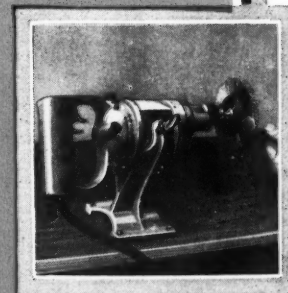
Cleaning carbon from cylinder head with Fleming Carbon Removing Brush.



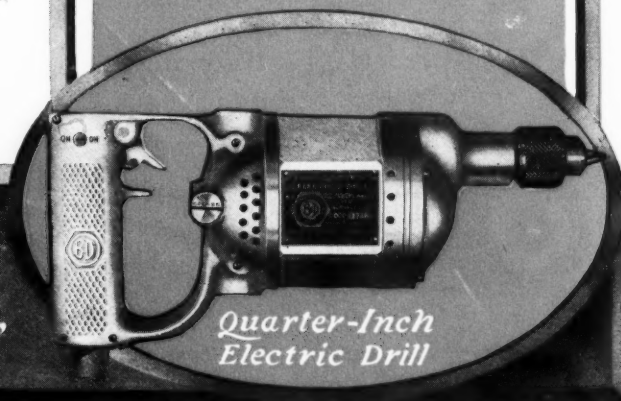
Cleaning valve stem guides with Fleming Valve Guide Cleaner.



Buffing inner tube for patching with Fleming Wire Wheel Brush.

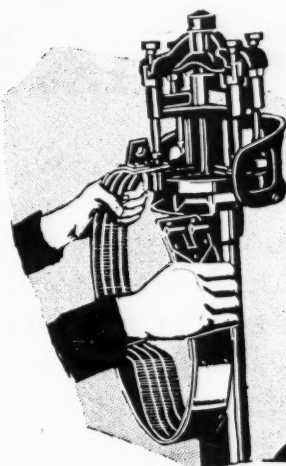
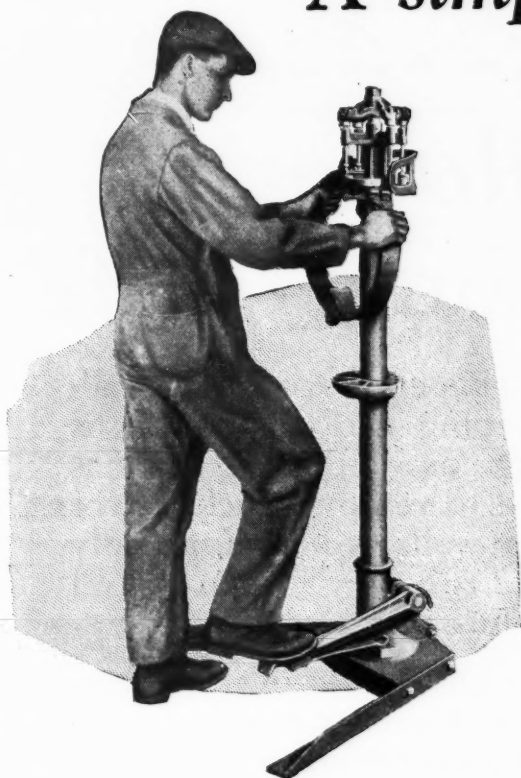


Cleaning carbon from valves and valve stems with Fleming Wire Wheel Brush.

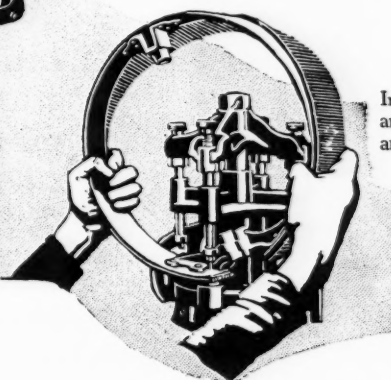


Quarter-Inch Electric Drill

A simpler, better, quicker way to reline Brake Bands, Ford Transmission Bands and Disc Clutches



External brake bands are easily handled as shown in this illustration



Internal brake bands are easily serviced in an upright position

The New **WEAVER** Model H Brake Service Machine

"Make a machine that will be simpler, quicker, more convenient for the mechanic to operate—that will handle all types of relining work—on one machine—and do a better job—without tying up his electric drill or other equipment."

These were our instructions to Weaver Engineers. How well they have carried them out you'll realize when you see the new Model H Weaver Brake Service Machine.

HIGH SPOTS

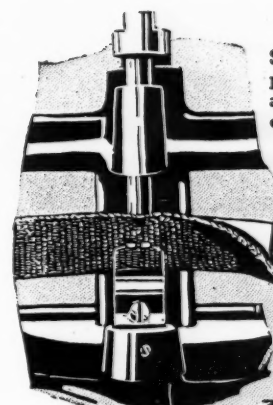
- Handles various types of internal and external brake bands, brake shoes, Ford transmission bands and disc clutches. No extras to buy.
- One machine handles the entire job—removing old rivets, punching and countersinking holes for new rivets and heading rivets.
- Holds work at convenient height for operator.
- Foot operated, allowing mechanic to use both hands to hold work.
- Turret provides ample clearance for all types of bands, shoes, etc.
- Insures countersinking all rivets to same depth.
- Makes a smooth, clean cut job—no bulging up or fraying of lining around rivets.
- No electric current required and no electric drills tied up.
- Employs method of relining similar to that used by factories producing 90 percent of new cars.

Your jobber's salesman will be glad to explain above details to you—or better still, arrange a demonstration for you. Ask him now and get your share of this profitable business while the busy season is on.

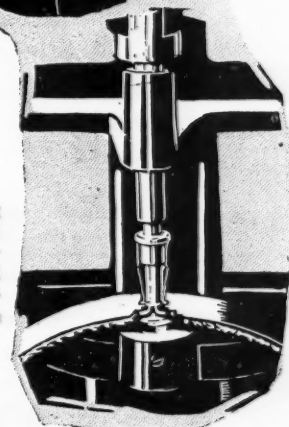
Weaver Manufacturing Company
Springfield, Illinois, U. S. A.

Weaver Canadian Company, Ltd., Chatham, Ontario

ADV. PICARD-SOHN, INC., N. Y.



Showing how punch and knife are used to shear off old Ford rivets



Set for inserting Ford rivet and spreader. Countersinking rivet and spreading are accomplished in one operation

Ask Your Jobber's
Salesman
.... He's a
WEAVER Representative



OIL-REGULATING TYPE
60c and up
(One to a Piston)

COMPRESSION TYPE 30c and up

Oil-Regulation Means Longer Life

ANY oil-ring which depends upon high wall-pressure, a scraping action, or *both*, is fundamentally wrong. A scraping ring that has enough wall-pressure to remove thick, heavy oil from the cylinder walls, will undoubtedly cause the cylinders to run "dry" when the oil becomes thin and diluted.

The PERFECT CIRCLE Oil-Regulating ring employs neither a high-wall pressure, nor a *scraping action*. It regulates cylinder lubrication by an exclusive, patented principle found in no other ring.

The groove on the face of the ring traps the surplus oil that would otherwise work past the ring, and returns it to the crankcase through the slots in the ring, and holes drilled in the ring groove behind the ring. Positive lubrication of the cylinder wall is insured, because the groove on the face of the ring can never be completely drained.

That's the reason PERFECT CIRCLE Oil-Regulating rings are original factory equipment in more than 140 motor cars, trucks and buses—why they are the most profitable replacement rings for jobber and dealer. Mail coupon in lower margin for the PERFECT CIRCLE proposition.

INDIANA PISTON RING COMPANY, HAGERSTOWN, INDIANA, U. S. A.

JOHN H. TEETOR, President

CHARLES N. TEETOR, Vice-President & General Manager

Export Sales Department: 549 W. Washington St., Chicago, Ill.

PERFECT CIRCLE

Oil-Regulating Piston Rings

Write name and address in margin and mail for valuable piston ring data. Indicate whether Repairman ☐

Car Dealer ☐

MA-12
or Supply Store ☐

MOTOR AGE

Reg. U. S. Pat. Office

Vol. XLVIII

No. 24

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MOTOR AGE is published every Thursday by
CHILTON CLASS JOURNAL COMPANY

Mallers Building, 5 South Wabash Avenue, Chicago

C. A. MUSSELMAN, President and General Manager

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Telephone: Central 7045

OFFICES

New York—U. P. C. Bldg., 239 West 39th St.; Phone Pennsylvania 0080.

Detroit—7338 Woodward Ave.; Phone Empire 4890.

Cleveland—540 Guardian Bldg.; Phone Main 6860.

Philadelphia—56th and Chestnut Sts.; Phone Sherwood 1424.

Indianapolis—519 Merchants Bank Bldg.; Phone Riley 3212.

Owned by United Publishers Corporation, 239 West 39th Street, New York; CHARLES G. PHILLIPS, President; A. C. PEARSON, Vice-President; FRITZ J. FRANK, Treasurer; H. J. REDFIELD, Secretary.

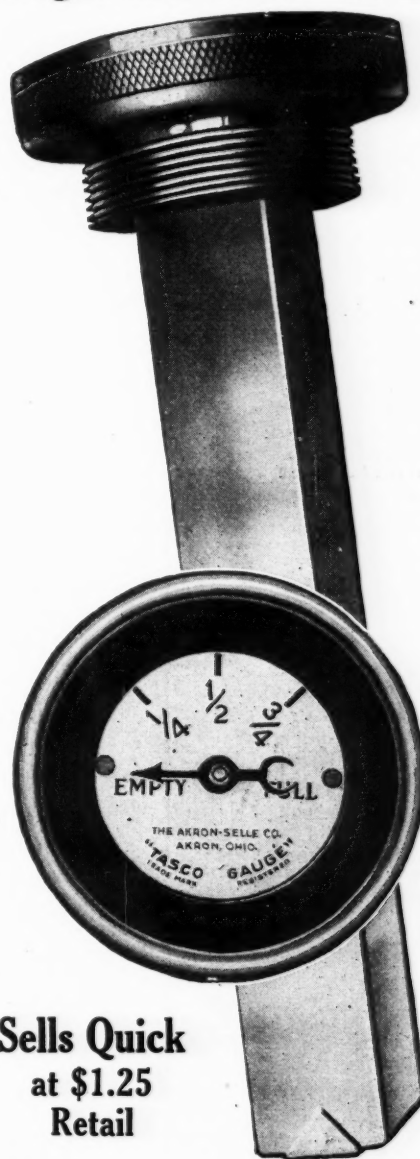
SUBSCRIPTION RATES: United States, Mexico and U. S. Possessions, \$3.00 per year; Canada, \$5.00 per year; all other countries in Postal Union, \$6.00 per year; single copies, 35 cents.

Member of the Audit Bureau of Circulations.
Member, Associated Business Papers, Inc.

Copyright, 1925, by CHILTON CLASS JOURNAL COMPANY

Subscriptions accepted only from the Automotive Trade
Entered as Second Class Matter, Sept. 19, 1899, at the Post Office at Chicago, Ill., under Act of March 6, 1879

Increase Your Sales—NOW!
By Selling What Sells—NOW!



Sells Quick
at \$1.25
Retail

TASCO gauges sell fast in the winter months. Nobody likes to go thru all the trouble of "measuring" the gasoline in their tank when the weather is cold. Ford, Chevrolet and Overland owners can read their gas at a glance with a TASCO gasoline gauge screwed in place of the filler cap.

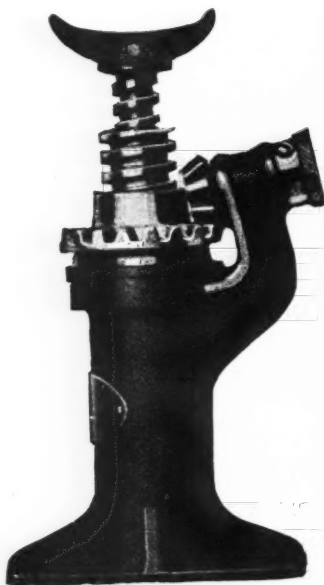
Counter display rack packed with every dozen enables you to show them. And—that's all that's necessary.

Order Type "H" for the new Ford Roadster, Touring and Tudor. Type "C" for the Fordor.

THE AKRON-SELLE COMPANY
"40 Years in Business" **AKRON, OHIO**

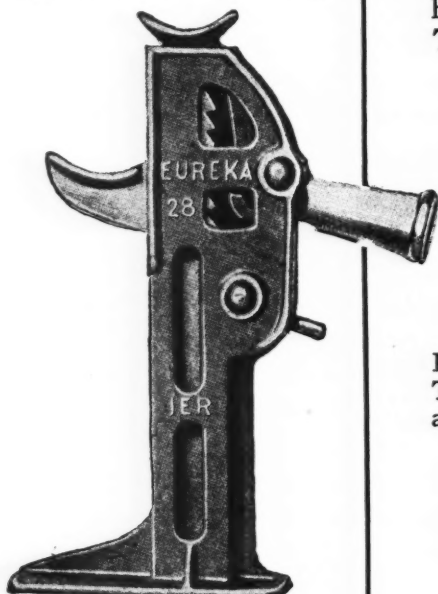
MAYDWELL & HARTZELL, Inc.
Los Angeles San Francisco
Pacific Coast Distributors

FORDS, CHEVROLETS and OVERLANDS



FOSTORIA No. 32
Special Balloon Tire Jack

Low placement—high lift. Every part designed especially for balloon tire service. Double machine cut screw of high carbon steel. Fast and easy to operate. Equipped with 36 inch collapsible steel handle positively locked in action. Adjustment, 7 to 17 inches. Capacity, 3,000 pounds. Weight, 8½ pounds. Packed in individual cartons. Price \$5.75



FOSTORIA No. 28

A husky ratchet type jack. Lifting pawls are heavy and spring mechanism simple. Adjustment, 8 to 16½ inches. Capacity, 2,000 pounds. Weight, 4½ pounds. Price \$2.25

Play Safe with Fostoria Jacks and Pumps

You're obliged to carry *some* kind of pumps and Jacks. Your money is invested in them. How quickly they turn over, how many come back, how efficiently and profitably they are restocked—these things mean *profit* or *loss* to you.

Fostoria Fenders for replacement are sold in larger volume than those of all competitive makes combined.

No particular *design* has put them so far in the lead. They are exactly to car manufacturers' specifications.

It is Fostoria's adherence to quality standards and their cooperation with jobbers, dealers and service stations—that has gained this leadership.

And now that same cooperation is behind Fostoria Jacks and Pumps.

This means:

- quality continuously maintained
 - ability and willingness to help the trade
 - a generous policy as to profits and service
 - prompt delivery of quantities desired
 - advertising and selling helps to keep the goods moving—profitably
- Play safe—with Fostoria Jacks and Pumps. They are excellently designed, quality built, and are priced and distributed *right*!

THE FOSTORIA PRESSED STEEL COMPANY

(Successors to the Ashland Mfg. Co., Ashland, Ohio)

Dept. BE

FOSTORIA, OHIO U. S. A.

Also manufacturers of the famous Fostoria Fenders



FOSTORIA No. 75 PUMP

A powerful pump. 1½ inch diameter with 18 inch barrel. Five ply rubber hose 24 inch long with "Han-D Slip-On" connection. Baked maroon enamel finish. Price \$3.00



FOSTORIA No. 1 IMP.

Sturdy little screw type jack for Ford, Chevrolet, Overland particularly. Capacity, 2,000 pounds. Weight, 4 pounds. Price \$1.40

FOSTORIA

formerly EUREKA

JACKS and PUMPS



This symbol means that Studebaker prices do not include the profits of outside body-makers

LOOK AHEAD!

Figure the value of your franchise over the next five or ten years

WILL you be in the automobile business in 1930? The car you are now handling — will it still be on the market?

Will you be in the red—or will you show a substantial yearly surplus?

* * *

More than 500 makes of cars have come and gone since the industry began.

This year, there are only 32 makers and 46 lines.

And 94.75 per cent of the 1925 total output is accounted for by the twenty "best sellers."

* * *

Studebaker resources insure stability and permanency for dealers.

And Studebaker's One-Profit principle of manufacture—today known and appreciated all over the country—makes Studebaker supreme in the fine-car field.

* * *

Studebaker's strong position in the fine-car field will be even more soundly entrenched in the next few years. Its franchise cannot but greatly increase in value.

For certain territories it is still available. Write for details. Communications will be held in strict confidence.

THE STUDEBAKER CORPORATION OF AMERICA
SOUTH BEND, INDIANA

T H I S I S A S T U D E B A K E R Y E A R

Rickenbacker

A • CAR • WORTHY • OF • ITS • NAME

Built Up To a Standard—Not Down To a Price

1926 Will Be A Wonderful Year

All agree that the coming twelve months will be the greatest year in the entire history of the automotive industry.

We are firmly convinced that that will be the case and are making plans accordingly.

Great as has been the success and growth of Rickenbacker Motor Company during the past four years, we are planning for still greater growth for the coming year.

Our product is established—our niche in the industry clearly outlined — and Rickenbacker reputation is securely founded.

How about you?

Are your plans set to get your share of the big business that is coming?

Are you selling a car that will perform as the critical buyer of today demands?

Are you selling a car that conforms to modern ideas of design and construction?

Association with success engenders success.

Now is a good time to associate yourself with a progressive like Rickenbacker. We are contracting and re-contracting for the great year 1926.

Rickenbacker Motor Company Detroit, Michigan

Famous "Six" Prices

Phaeton	\$1495
Brougham	1595
Roadster	1595
Coupe-Roadster	1695
Sedan	1795
De Luxe Coupe.....	1995

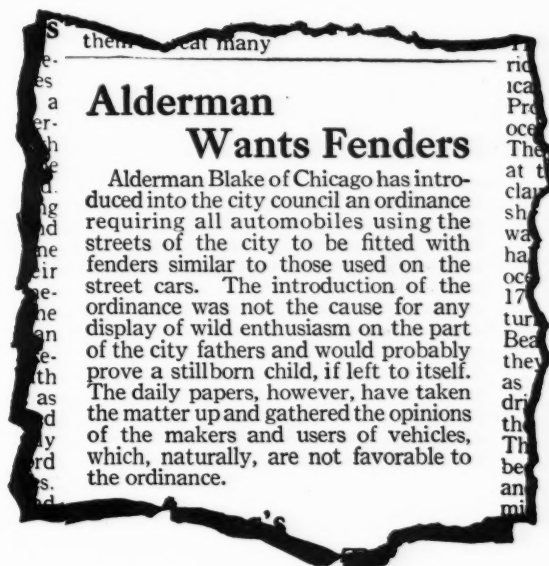


f. o. b. factory—plus war tax

Vertical "Eight" Prices

Phaeton	\$1995
Brougham	1995
Roadster	1995
Coupe-Roadster	2095
Sedan	2195
De Luxe Coupe.....	2320

Wanted: "Cow-Catchers"



News Item of January 18, 1900

It never did get to "cow-catchers" on automobiles. There were not enough of them in those days to make even bumpers necessary.

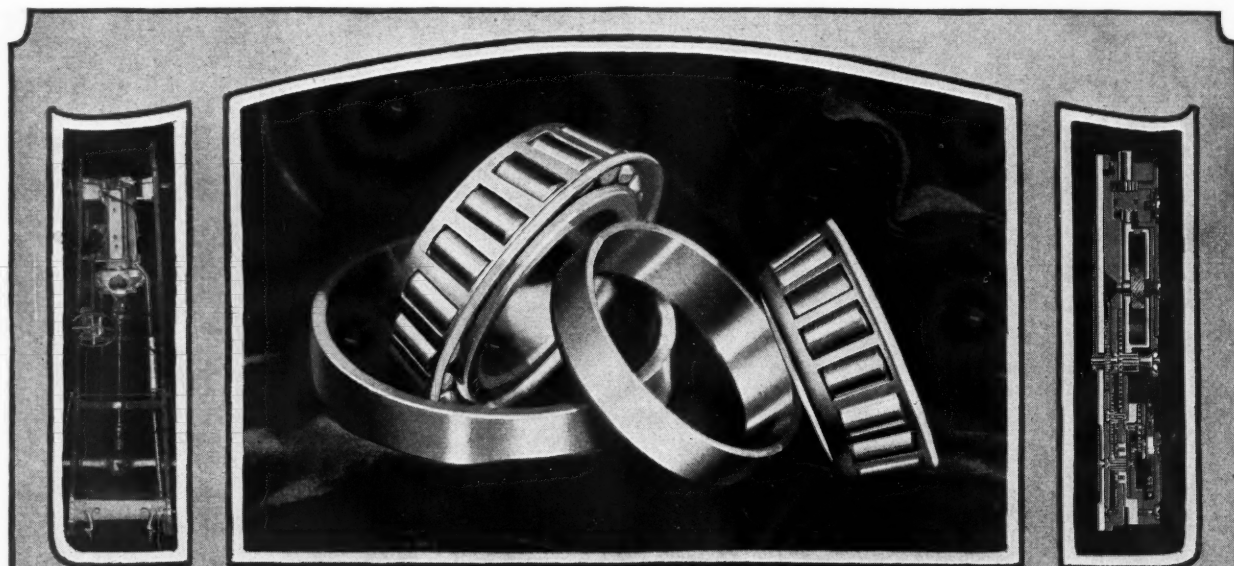
Today among all the thousands of cars in traffic—even where there is a sprinkling of foreign makes—you see very few cars that are not equipped with Timken Tapered Roller Bearings.

The ability of Timken Bearings to make cars run better and last longer has been one of the biggest factors in changing the automobile from a novelty to a necessity.

Dealers find that they make their cars more necessary to prospects when they can say "Timken-equipped."

THE TIMKEN ROLLER BEARING CO., CANTON, OHIO

TIMKEN *Tapered Roller* BEARINGS



Bock Bearings - The "Jewels" of Your Car

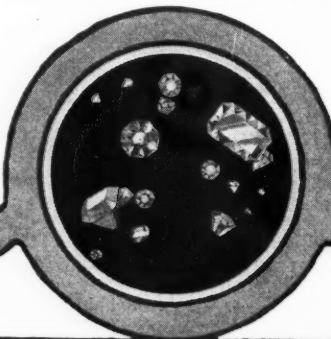
COMPARE the diagram of the motor car chassis in the left panel above with the cross-sectional view of the watch "train" on the right. Both are built for motion, and motion inevitably causes friction.

In a fine watch the irreducible minimum of friction is attained by mounting the pivots in bearings made of precious stones. You hear a watch described as having seven jewels, in the case of the lower

priced models, up to twenty-three for the finest movements. As the number of jewels is increased, friction is decreased.

The same rule applies with the automobile, and just as jewels help to make the fine watch, Bock Taper Roller Bearings are "ear-marks" of the fine car. Made of special alloy steel, their superb workmanship and superior anti-friction design assure the quality of performance that makes a car a success.

THE BOCK BEARING COMPANY, TOLEDO, OHIO



BOCK

TAPER ROLLER BEARINGS

MOTOR AGE

Vol. XLVIII

Chicago, December 10, 1925

No. 24

Summary and Index of Important Events in

This Week's Automotive News

Detailed Stories from MOTOR AGE Staff Writers and Special Correspondents Appear in News Section Beginning on Page 32

Manufacturers begin reducing output in preparation for inventory. Dealers' sales continue good and steady stocking for winter business is rule. Page 32.

Motor and Accessory Manufacturers' Association rejects plan to merge with A. E. A. Page 32.

Compromise is reached on bill now before Congress to reduce automotive war taxes. Page 33.

N. A. C. C. frowns upon hotel room exhibits during national shows. Page 33.

Car builders in Cleveland say November was the best month on record. Page 43.

Speedway officials mail entry blanks for Memorial Day classic at Indianapolis. Page 35.

Sectional meetings of Society of Automotive Engineers are announced for December. Page 34.

Dealers in Indianapolis see excellent business in 1926. Page 34.

Ford's new steel rolling mill begins operations in Detroit River Rouge plant. Page 34.

Sales of new cars show big increase in San Francisco territory. Page 35.

H. W. Booth joins Ajax as assistant sales manager. Page 35.

Chevrolet expects a gain of 60,000 in its yearly production in 1925. Page 35.

New car sales in Los Angeles are reported on an average level for November. Page 36.

T. P. McGough of Chicago is high man for the United States in sales contest staged by Velie. Page 36.

Cincinnati dealers report public is buying quantities of used cars to be held for expected strong market in spring. Page 36.

Overall height reduced and other refinements are announced in Dodge Brothers type B sedan. Page 37.

Hoover reports on work of automotive division in 1925. Review shows continued expansion of activities. Page 37.

Carolina dealers report that their orders are still ahead of output and delivery. Page 38.

Citroen introduces new model with four wheel brakes to sell for 21,500 francs. Page 38.

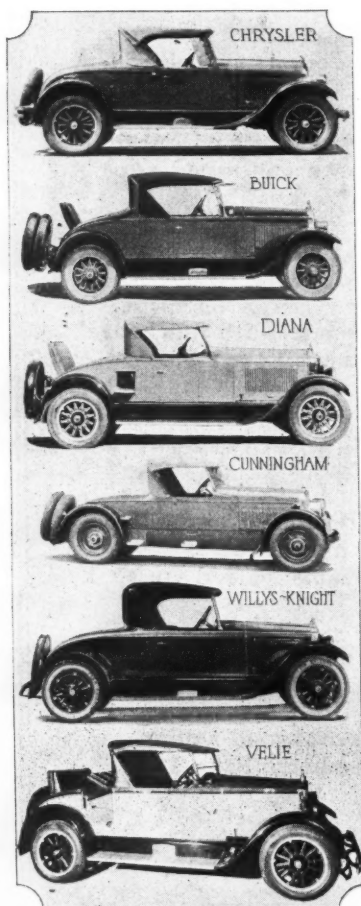
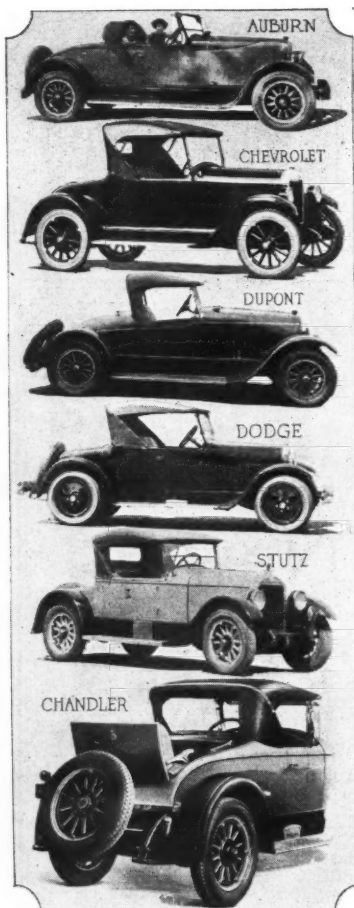
Firestone report for fiscal year shows a gain of \$40,000,000 in sales and \$5,000,000 in net income over 1924. Page 38.

Collections of internal revenue from automotive industry in first ten months of 1925 show gain of \$64,578,981 over same period in 1924. Page 39.

R. M. Wilmot Shaw is appointed new advertising manager of Olds Motor Works. Page 39.

Dealers in Chicago report good volume of business throughout November. Page 39.

In Next Week's Issue—Rebuilding Used Cars to Sell New Ones.



The Roadster Plays a Comeback

Demand for a "Second Family Car", Snappy Body Lines and Sport Appeal Apparently Figure Prominently in Reasons for Increased Buying Interest

By CLARENCE PHILLIPS

THERE has been an increasing demand for roadsters—an increase which has amounted to more than a seasonal spurt. It has come as a steady development which began some time last year, gathering momentum at the opening of the present year's active selling and increasing its force as the 1925 season progressed.

With 1925 nearing its close the roadster continues going strong. Some companies will check out with new roadster records this year. The trade as a whole will close books Dec. 31 with a unit roadster volume surpassing either that of 1924 or 1923 and possibly widely surpassing either of the other two years immediately preceding.

According to trade reports there are some sections where the roadster is the only open model that has been enjoying increased demand, touring car demand having been steadily diminishing or remaining at very low ebb as closed models have gained in favor. Apparently the roadster is having its inning again.

"The roadster is playing a strong comeback" remarked a factory man the other day, and a check up reveals that it is doing all of that.

In order to obtain some definite roadster facts MOTOR AGE submitted a questionnaire to the factories replies to which revealed some interesting observations and sidelights respecting the reception and progress of this particular body style.

Importantly, the answers show that

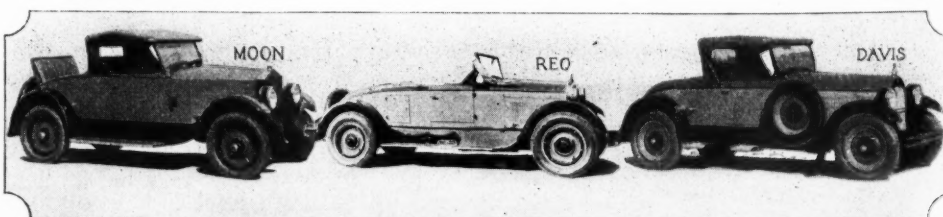
there is a growing roadster interest in the industry just now, reflecting, of course, growing interest on the part of the buying public. A number of factories which had never made roadsters before or which had dropped them temporarily have included roadsters in their schedules of the past 18 months. Others not listing roadsters at present are considering this addition to their lines.

It is practically certain that several companies not having roadsters on their lists today will have them on display at the national shows or soon thereafter. One company which has not listed a roadster for the past two years but which expects to display roadsters at the shows makes this frank comment:

"Information that you will receive will undoubtedly convince you that 1925 was a surprisingly fine year for roadsters. The best information that we have been able to gather assures us that we missed out by not having a roadster this year."

A study of records shows that there has always been more or less uncertainty in factory minds as to the roadster's sell-

One big reason for increased interest in roadsters recently is found in the pictorial illustrations accompanying this article. American makers have put smartness and utility in these models in a manner naturally calculated to tempt many automobile buyers



As the Roadster Outlook Has Been Sized Up Each Year Lately by Manufacturers

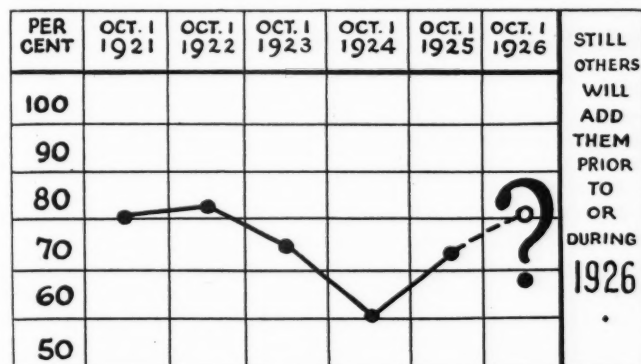


Chart shows roadster curve over five-year period. One hundred per cent would mean all makes represented had roadsters on lists. Eighty per cent, therefore, means 80 per cent of all makes represented that year had roadsters on list

ing qualities, few of the makers having carried roadsters year-after-year without dropping this body one or more times to possibly take it up again later.

The chart published in connection with this article gives an idea of the roadster's prominence in factory production lists over a period of five years ending October 1, 1925. It will be noted that this body's popularity with the makers has greatly fluctuated.

On Oct. 1, 1921, as the chart indicates, eighty per cent of the makes represented (in a list of 112 makes) included one or more roadster bodies. The change from that time to a year later was not material.

But notice the downward pitch of the curve from October, 1922, to October, 1924. From 82 per cent on Oct. 1, 1922, there was a drop to 75 per cent by October, 1923, and a substantial continuance of this grade to 60 per cent by October, 1924.

And now notice the sharp rise from October, 1924, to October, 1925.

In the past year the line has gone from 60 per cent to 73 per cent, going upward on a grade approximately that of the descent.

How much farther upward it will go it is difficult to say, but there are reasons to believe the ascent will continue to a greater or lesser extent for some time yet. It is not at all unreasonable to speculate

that at this time a year hence more than four-fifths of the companies making passenger cars will be supplying roadster models. It is possible the proportion will be still greater.

As it is, at the present time 73 per cent of the makes listed include this type of body where but 60 per cent of the makes represented included it a year ago.

The significance of this sudden turn to roadsters by manufacturers is in the fact that production lists strive to follow the trend of public preference. Merchandisers in the field have found a line of lowered sales resistance in a certain buying class desir-

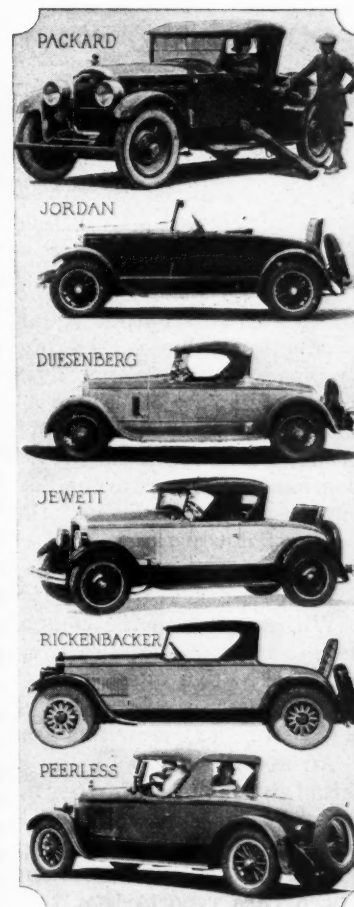
ing roadster models and makers have capitalized the opportunity by putting out roadster products with especially strong selling qualities. Many retailers over the country who had quit carrying roadsters or who have recently begun showing them for the first time are studying the model's selling points so they will know how best to deal with those buyers who are out shopping for this particular style of body. It is good selling theory to sell the prospect hardest on what he seems most sold on himself, following the line of lowest resistance. Factory suggestions of roadster selling points are touched on later on in this discussion.

It might come as a revelation in some quarters of the trade to know that a large representative group of our factories, 21 to be specific, has been making four or more roadsters on an average to each six touring cars. Other companies were unable to supply estimates on this particular point.

Incidentally, these 21 companies have been giving an average of 74 per cent of production to closed cars.

That puts open car production at 26 per cent of the total volume, with roadsters representing 41 per cent of the entire open car output.

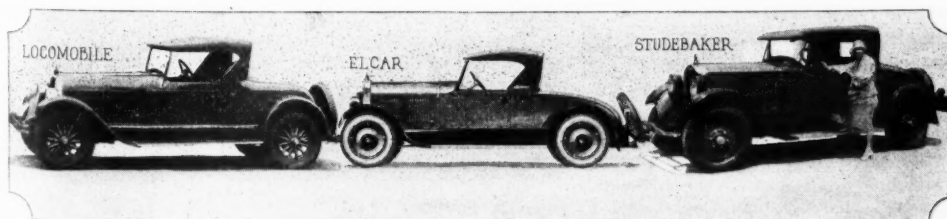
There is more than a bare chance that next year will find the factories giving the big end of open car production to roadster

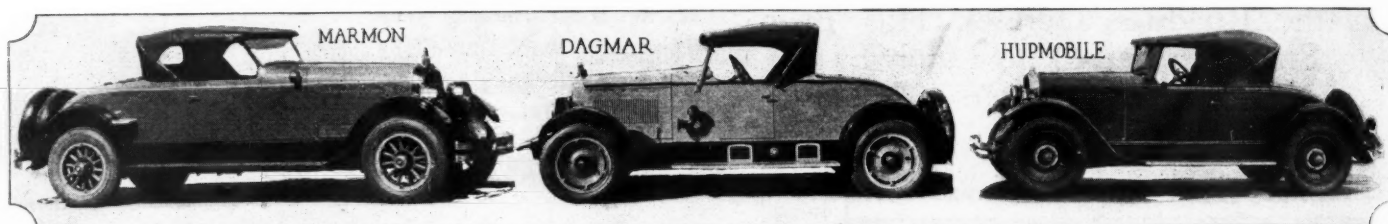


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designs. It might be interesting in this connection to remark that Ford's production schedule for October called for a roadster output equal to 20 per cent of the total production volume. All big producers of more popular low priced cars are experiencing brisk roadster interest.

One company handling a medium priced line reports that it is giving 90 per cent of its open car production to roadster bodies. Another reports that its roadster production has been running 85 per cent of the total open car output while with others the proportion ranges from 75 per cent downward.

Demand Much Above Last Year's

With respect to the comparative tone of roadster business to the end of the third quarter this year the factories were asked two questions: (1) Has the roadster demand so far this year been better than it was to this point last year? (2) How much better (in percentage)?

An average of replies by companies in position to give actual figures or estimates indicates an improvement over the first three-quarters of last year of 52 per cent in roadster demand.

One of the largest volume manufacturers of medium priced cars reports that the roadster business this year has been three times greater than that of last year. That is an outstanding case. Elimination of the three highest instances wherein increases of 300, 100 and 100 per cent were reported, would reduce the general average to something above 30 per cent, which still looks large.

Replies also indicate that the roadster business for the industry generally for the first three quarters of the present year scored a material increase over the average roadster business of the previous four years.

And now for whys and wherefores. Question No. 8 submitted to the makers was as follows:

"Assuming that general public interest in roadsters has been increasing—to what do you attribute the improved interest?"

In other words, what is responsible for the roadster's comeback? What are its big selling points? From the mass of replies we have picked out the following high spots in this connection:

- Its appeal as a second family car.
- Ease of management in traffic.
- Demand for small carrying capacity.
- Its compactness.
- Smartness.
- Beautiful lines of more recent models.
- It is the logical sport car.
- A car for general utility.
- Handiness.
- A "business and professional" car.
- Improved design.
- Appeal to persons wanting outdoor life.

Growing popularity of golf.

The worker's daily transportation.

Recently more snappy yet relatively low-priced.

There seems to be general agreement that smartness of current designs, coupled with the roadster's practical utility for many purposes, make for easier selling of this body. Companies featuring rumble seat jobs find that the rumble seat has a powerful sales appeal. That the demand for a second family car is increasing roadster sales is a point on which the majority of factories agree.

"More families are buying two cars," says one factory, "buying the roadster for a sport car in addition to the family sedan."

"Many families that had one car formerly," says another typical answer, "now buy a sedan and a roadster." One company finds that "the two-car tendency is increasing very rapidly" while another remarks that "the public is buying the two-car idea," indicating that this company is merchandising the "two car" idea.

A Different Angle

Differing with the majority to an extent is one reply to the effect that the roadster's rise in popularity is "not so much as a second family car but it is favored by certain elements with whom appearance is a factor—mainly appearance."

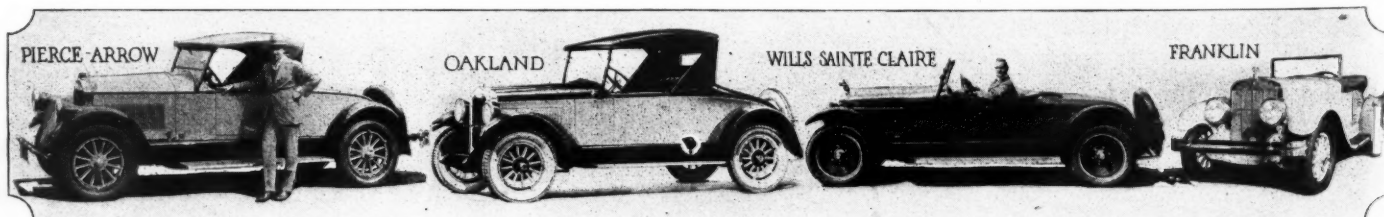
Following is an interesting extract from a letter which one manufacturer sent in:

"We feel sure that the tendency toward roadsters is due to the fact that they are sport models and appeal to the public for that reason. We believe that there is a growing tendency on the part of owners to buy roadsters for use as second family cars, particularly for use of the children and for running out to the golf club. We believe that the added interest in roadsters has been established because of the greatly improved appearance of roadsters in general. We believe that the roadster is the accepted sport model, or sport type, of today, and that other open models will gradually pass out of the picture."

Having digested that, read this: "Answering No. 8 of your questionnaire, the interest in roadsters has been increasing, but it is our belief that they may go out of style more quickly than they came in." That is from a company which now lists no roadster but which expects soon to add one.

To quote another letter: "We have noticed a decided increase in the roadster business this year over last and this increase will undoubtedly be even greater during the coming year. We find that families are beginning to afford two cars which undoubtedly has been a factor in increasing roadster demand. The price element is also to be considered when estimating the demand for open and

(Continued on page 43)



This Trade Association Is a Business



W. L. Hughson, president San Francisco Automobile Trade Association

No Banquets, Picnics or Other Fun, But \$200,000 Saved for Its Members in Seven Years Is Record of San Francisco Automotive Group



Arthur D'Ettel, manager and secretary of San Francisco Automobile Trade Association

OUT at San Francisco, where the flying fishes build their nests in the hinges of the Golden Gate and the domesticated whales hold monthly field-days during the tourist season, they have an automotive trade organization which is probably the most successful, as well as one of the oldest, of its kind in the United States. It has been in continuous and successful operation for 14 years; it has saved its members hundreds of thousands of dollars along several lines; it has corrected a number of evils in the industry, and inaugurated a number of good practices which now have become habits; and it was originally devised, and ever since directed, by one man.

It is the San Francisco Automobile Trade Association, of which William L. Hughson is president and Arthur D'Ettel, secretary-manager. Now, if anybody thinks that this business of being a secretary, or a manager, or both of them at once, to a trade association is a cinch, let him try it. But D'Ettel started off, away back in 1909, sixteen years ago, by getting the idea of an automotive trade association which should bring all the crafts together in one beneficial organization. It wasn't until 1911 that he brought the garage men to see it his way, and then only five of them saw it, but by 1912 he had met Old Man Trouble in all disguises, had the old gent whipped, and ever since that time has been running the association just like a Swiss watch is supposed to run, only better.

Today, the San Francisco Automobile Trade Association has a membership of about half of the 450 repair, garage, paint, and other automotive crafts in San Francisco, and the original five garage men have grown to 110.

This year's officials of the San Francisco Automobile Trade Association are W. L. Hughson, Ford dealer, president; C. N. Weaver, Studebaker distributor, first vice-

president; Roy Alexander, Chandler and Cleveland, distributor, second vice-president; and Arthur D'Ettel, secretary-manager. The present board of trustees, consists of Manley Harris, from the Auto Body Building Painters and Trimmers Association; H. M. Nicholson, Automobile Repairers' Association; Herman Hinze, Automobile Electrical Association; and A. G. Steelman, Garage Owners' Association. The secretary-manager is also a member of the board of trustees.

Along practical lines, the association has done a great deal for its members, and, this year, is still further expanding its activities. The garage owners, for example, have a purchasing department, which has been in very successful operation for seven years, during which time it has saved, as the books show, more than \$200,000 to the members. Mr. D'Ettel does the purchasing, with the aid of men who know particularly well each commodity to be purchased. Each man puts up the money to buy what he wants. This fund is put in the bank and the secretary-manager buys in a lump and distributes the commodity purchased to the individuals. Only large lines, such as gasoline, lubricating oils, soap, sponges, are bought by this method. Tools, metal supplies and accessories are never touched. All these supplies are bought locally from jobbers. An employment bureau is maintained, and this has been particularly successful with the garage men, both in cutting down their labor turnover and in helping them to get more competent men. There is no charge to either party for the use of this department.

The association is operated on a strictly business basis. Picnics, banquets, "field days" and similar social events have been abolished as not only not useful to the organization, but often harmful to its development as a business undertaking. Radio is called on frequently to disseminate information to the membership, and has been found very successful.

Practical Steps in Magneto Overhauling

*Barney Hangs Out His Shingle
and the Red Head Gives Him
Some Pointers on Automotive
Electrical Work*

By A. H. PACKER

THE Red Head spelled it out slowly, for it made no sense to him. Valvy, looking over his shoulder was equally puzzled.

T-R-A-C-T-O-R
E-L-E-C-T-R-I-C-A-L
B.-O.

Barney was making a sign on a big white strip of cloth, but Bill Fixit's roaming trouble shooting men were having a hard time to figure what it was all about.

"Are you lookin' for a farm hand that can run your cast iron horse?", Valvy wanted to know. "Most of the tramps I've seen can hardly handle a pitch fork, let alone shoot electrical trouble on a tractor."

"You haven't seen the half of it yet," said Barney. "Look at the rest of the sign and you will ken the ambitious idea that's been buzzing under my engine hood since you boys have been here. Dad wants me to settle down to work of some kind, and as digging in the mud and sterilizing barns doesn't appeal to yours truly, I've decided to do some electrical work for this farming community instead of chasin' around in the race car all the time."

Then Barney pulled the rest of the sign out from under the bench, and Red and Valvy began to get the idea. It read,

TRACTOR AND AUTOMOBILE
ELECTRICAL OVERHAULING
B. O. SMITH

"You sure have a lot of crust," said Red. "But I've seen it done before and know of at least two places that are out in the woods, and where the work comes in for miles in preference to being taken to the town garages. But you haven't done much electrical work, and may get stuck on a job now and then."

BILL FIXIT STORY No. 13

PREVIOUS installments in this series by A. H. Packer were published March 19, April 2, April 16, May 7, May 21, June 18, July 30, August 13, September 3, September 24, and October 22, 1925.

SYNOPSIS: Bill Fixit's electrical trouble shooting men start on a trip in a Speedway car. They stop at various places along the way and in a mining community are robbed of all their money. This necessitates getting a job with the local electrician, to whom they give some helpful information gained in working in Bill Fixit's garage. Directional radio is used by government agents in locating a gang of crooks and the boys' money is recovered. The trip is continued and the night after leaving the mining town they stop with Barney Oldfield Smith, an amateur race driver and help him with a magneto job, where a new condenser is needed. The condenser is obtained from Bill Fixit's electrical station, but in the meantime Valvy discovers an old radio set, and the Red Head engineers a trouble shooting job on the set and restores it to its original usefulness.

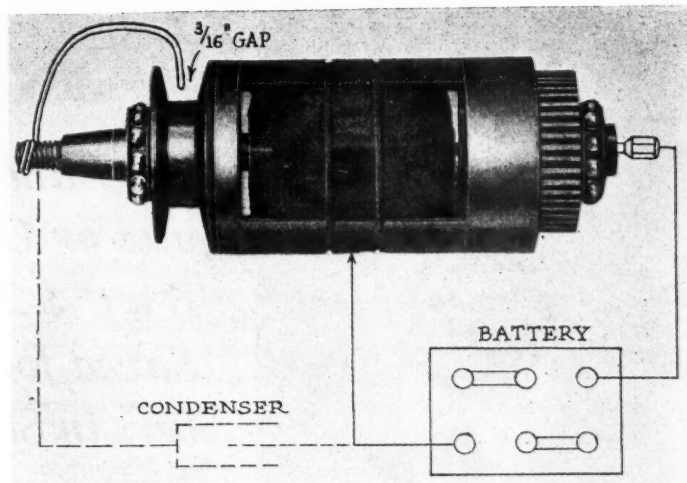


Fig. 4. Simple method of testing a magneto armature with a battery and a couple of wires.

"Right as usual," said young Smith. "But Bill Fixit's prompt service gave me an idea. I'll tackle every job, promise each one in two or three days and when I get stuck send them to Westville. When I get by with a job I'll make some money, and when I fall down I'll get some experience. Then pretty soon I will not fall down on any of them."

"You see I am figuring on pumping you fellows some more, too, before you get away; that is if the old house and mother's cooking is sufficient attraction to pay for your trouble."

Everybody Satisfied

"No kick on that proposition," said Valvy, still thinking of the Thanksgiving feed that had vanquished him in the fifth round. I do most of the eating and Red does the work, it suits me fine."

"I like to do my stuff," said Red, "as well as Valvy likes to eat, so we'll call it a go, and as you are representing yourself as a tractor expert we better take up some of the practical tricks in magneto overhaul, because that's the only electrical unit you find on many of the tractors."

Red went up to his room to get a bunch of diagrams that Bill Fixit had made at one time, and when he came back the lesson started, with Red, the teacher, Barney Oldfield Smith the pupil and Valvy listening in just for luck.

"From a practical standpoint," Red began, "its always best to take a magneto off rather than try to fix it on the car or tractor. In the first place, by the time a magneto gives trouble it probably needs a general overhauling. If the points are causing the immediate trouble, it might be possible to get the engine running by filing the points. This however would give but temporary operation and would not be worth while for the repairman, for only a nominal charge could be made."

"Then when the machine went dead again in a short time, the only thing the customer would remember would be the trouble, and he would forget the fact that he had not paid for a real overhaul."

"Removing the magneto is simple enough, but if the electrician is wise, he will check the position of the engine and then note the position of the distributor brush as well as marking the magneto coupling. Because the magneto

shaft turns around twice while the distributor turns once, it is not enough to merely mark the coupling, for you can loosen the coupling and turn it around once so the marks are again together, but this gives the spark at the wrong cylinder.

"It is not absolutely necessary to set the engine on dead center, but some electricians prefer to do this, turning the engine until the rear exhaust valve has just closed, as this gives the approximate firing point of the front or No. 1 cylinder.

"If the tractor or car is in your yard it may not be necessary to disconnect the distributor cap from the spark plug wires, but it may be left hanging, while the magneto, without the cap is taken off. In either case, however, the cap should be carefully removed, so that the distributor brush and spring are not lost. Having the distributor cap to work with is of some help, however, when the magneto has been put together and the time comes to check the meshing of the distributor gear to see if the distributor is timed properly.

"The next step is to take the interrupter off and this may necessitate disconnecting a wire. This is true in the Dixie magneto, while in armature types such as Eisemann and Bosch it is not necessary as the screw in the center of the interrupter acts to both hold the interrupter on and also to connect the insulated contact point to the primary of the armature.

"In this illustration of Bill's (Fig. 1)," said Red, "we have the interrupter of a magneto shown and below it we have an enlarged view of the points, the sketch at the right showing how they should be, and the one at the left showing how they often are after missing begins. The contacts require a layer of metal which does not oxidize under the action of the spark. Platinum is often used for this purpose although on battery ignition systems various other metals, notably tungsten, are used. On magnetos platinum iridium is usually considered the most satisfactory.

"Whatever the substance may be, however, it is essential that there be a complete layer of it making contact. When the points have burnt away as shown at the left

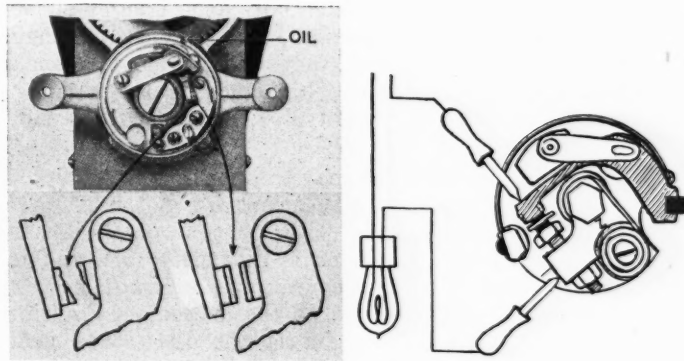


Fig. 1. Left: Checking the interrupter points. Lower right (Fig. 1), points in good condition. Lower left (Fig. 1), points worn down to the iron; right: Fig. 2. The 110 volt test applied to a magneto interrupter to make sure it is not shorted.

sketch (Fig. 1) it means that the iron part of the contact is helping to make the contact, and when the break occurs a bad arc forms, due to the tendency of the iron to burn. The burning iron tends to sustain the arc which permits the primary current to die out slowly, thus seriously weakening the secondary or sparking voltage.

"At times it is difficult to see whether the layer of platinum is good or not, but if in doubt the points should be cleaned with a file all around the sides so that the line of the weld can be seen. When the platinum is nearly gone, new points should be put in, or the magneto will go bad again in a short time.

The 110-Volt Test

"Interrupter insulation rarely gives trouble, but if we are to make a thorough job of it the 110-volt test should be used after the interrupter has been removed. To do this a piece of paper or wood may be used between the points to hold them apart and the test points used to see if the lamp will light up (Fig. 2). If the lamp lights the interrupter is shorted, the insulation being defective. At the same time it would be well to feel the spring action and see if it seems to be normal.

"When the interrupter and distributor have been removed, the high tension pencil, if one is used, should be removed carefully, also the high tension brush holder, these parts being laid aside where they will not be injured. The next step is to remove the armature.

"In some magnetos grounding brushes are used to carry the current from the frame of the machine back to the armature, without making it necessary for the greasy ball bearings to carry this current. Where such magnetos are worked on it is essential to remove the ground brush, if possible, before the armature is withdrawn. In Bosch magnetos, for example, there are two ground brushes, one of which is seen at the back of the interrupter when the interrupter is taken off. The other can be removed by turning the magneto upside down.

"In withdrawing the armature on an unknown magneto it is always well to have the armature vertical, that is with the iron end pieces of the armature in the up and down position instead of at the sides. Then if there is an inside ground brush it will ride over the surface of the armature and will not spring up into the winding space when you start to pull the armature out.

"This sketch," said Red, "shows what I mean (Fig. 3) where the lower view shows the brush riding the iron part of the armature, while the upper view shows the armature turned the other way and the brush springing up into the winding space. When the armature is pulled all the way out, it will have to shear off a part of the brush in order to come out.

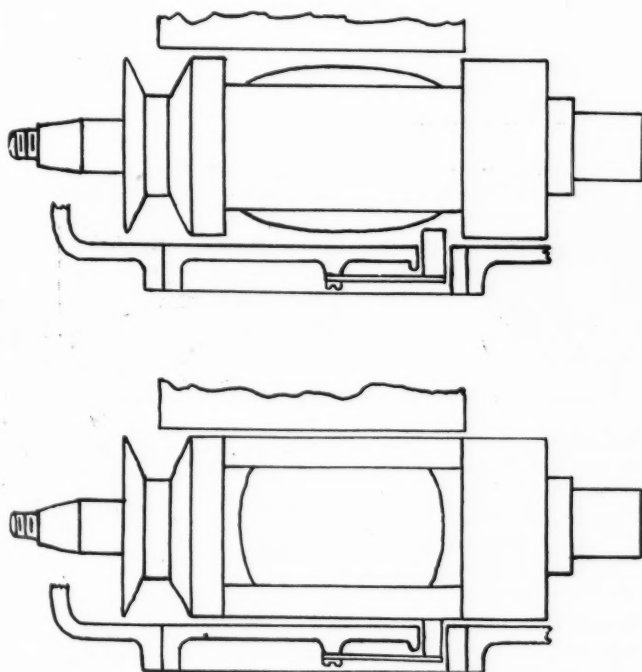


Fig. 3. Removing armature without breaking ground brush. Lower view shows the safe method. Upper view shows method that results in breaking the brush.

"Before the armature is taken out, some trouble shooters prefer to take the magnets off, using keepers on them as they are removed so that they will not be weakened. As every magneto overhaul job includes remagnetizing, however, it is somewhat doubtful whether this is really essential or not.

"Another precaution that may or may not be observed is to look for the distributor gear marks that tell where to mesh the distributor gear with the gear on the armature. In some cases the mark is difficult to see and in other cases there may be several marks, made by the various men who have worked on the magneto. For this reason it is just as well to forget the distributor gear marks, but to carefully check the setting as the magneto is being ressembled again.

"After the armature has been removed it should be tested. There are various ways of doing this and some devices for the purpose are furnished by the magneto companies to the service stations representing them. Bill showed us all a simple method once which requires no equipment but a battery and a couple of wires (Fig. 4), although a spare condenser can be used to get a better test.

Regular Interrupter Omitted

"The regular interrupter can not be used applied to the end of the armature shaft, for there it is a short on the primary winding as far as outside current from a battery is concerned. For that reason the regular interrupter is left off and the screw which held it is replaced to make a connection to the primary. Then one battery terminal is connected to this screw.

"Before we go any farther with our test it is necessary to provide a gap at which the spark may jump, or we will be in danger of straining the insulation of the armature, for when out of the magneto it is no longer connected to its safety gap. The improvised test gap is made up by twisting a piece of wire around the shaft and bending it over to within $\frac{1}{8}$ in. of the slip ring. The next step is to take a wire from the other battery terminal and rub it along the surface of the armature.

"Theoretically we should have tungsten or platinum points to break this circuit, but actually it is surprising how the ridges in the center of the armature will help get a sudden break as the wire is rubbed over the armature. As this is done sparks should jump at the gap.

These sparks should jump successfully but should not be very fat or red, for the condenser in the armature is not properly connected for this battery ignition test, it being across the primary and not across the improvised interrupter.

"To get a fatter spark and one that will jump a little farther, we can connect a spare condenser as indicated by the dotted lines, for in this position it will be across the crude interrupter we are using. It is, of course, possible to connect a regular interrupter in the circuit and if this is motor driven, as by a horn motor, it would be possible to run a test on the armature for half an hour or so. This would be advisable if there is any question about the magneto working properly after the engine gets hot.

Results of Tests

"It is now interesting to record the possible results of these two tests and the conditions they indicate. We will call the No. 1 test the test in which only the battery and wires are used and the No. 2 test the one where we add the other condenser, the various possible conditions being as follows:

No. 1 test O. K. No. 2 test O. K. Armature O. K.

No. 1 test, spark weak; No. 2 test O. K., condenser poorly connected or low in capacity, or wire to battery test leads too long for good results on the No. 1 test.

No. 1 test, spark very weak; No. 2 test also weak, secondary or condenser shorted. Added condenser does not improve test under either circumstance.

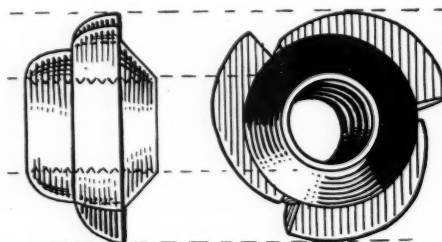
"In the test results just given it will be seen that if poor results are obtained on both tests we do not know what is wrong. However, in either case it would be necessary to take the armature apart, to change either condenser or coil, and when we have gone far enough to disconnect the condenser we can test it with 110 volt points as we tested the interrupter (Fig. 2). If the condenser is shorted we need a new one. We can at this point test the coil over again just to make sure that we are not putting in a new coil unnecessarily."

NOTE: The subject of magneto overhauling will be continued in the next Bill Fixit story.

Lyon Key Nut Designed to Prevent Unauthorized Removal

A Chicago inventor recently brought out a novel form of nut designed particularly for use in connection with securing rims on motor car wheels and so constructed that it cannot be removed unless the key wrench is at hand. An ordinary wrench, socket wrench, pipe wrench or pliers will not affect the nut in the slightest.

The nut includes a rounded body, as shown in the illustration, and is made with three projecting lugs against which similar lugs in the key wrench bear when the nut is tightened. Small grooves are cut along each face of the lugs on the nut and slightly below the surface and these grooves are the ones into which the particular part of the key wrench fits upon removal of the nut.

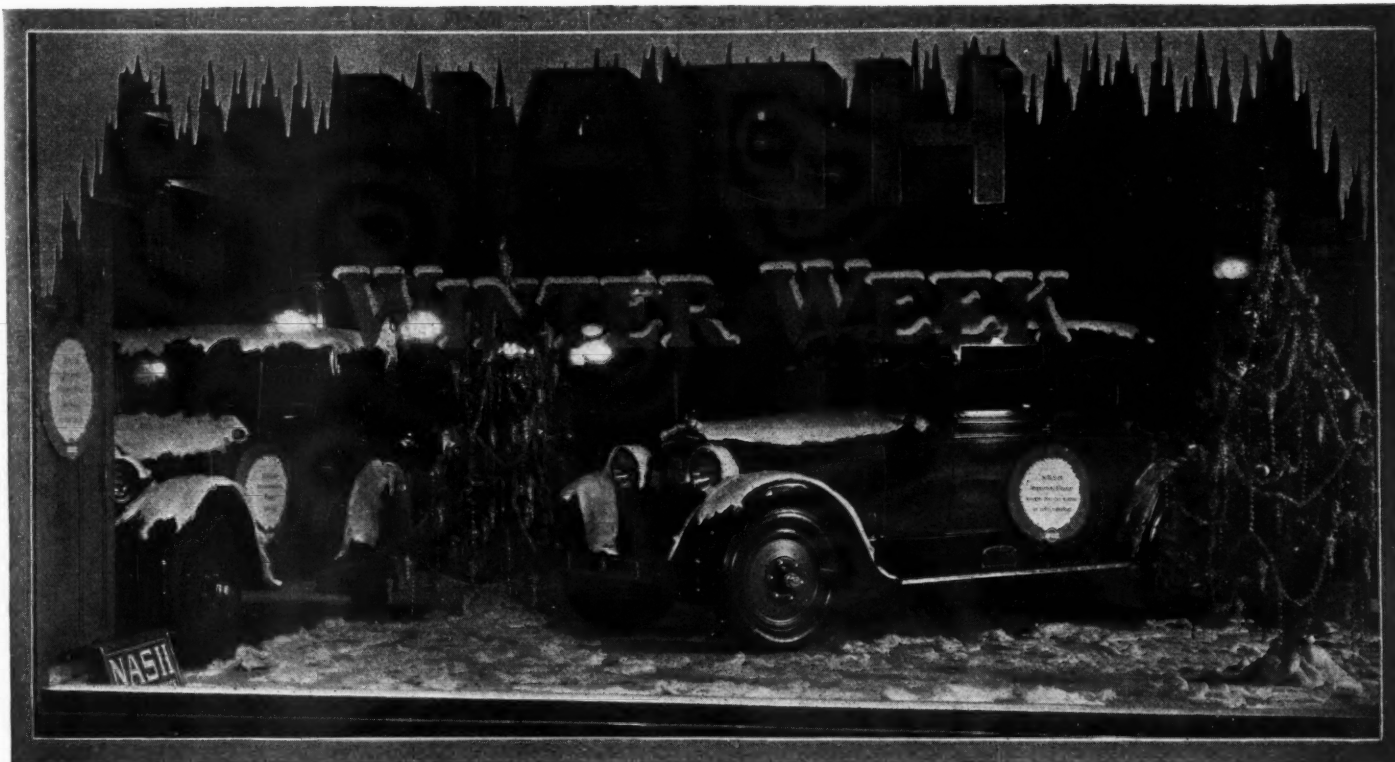


Left: Lyon Key Nut, showing the details of construction; right: Its application to a wheel rim

The exterior surfaces along the small grooves are tapered or feathered and consequently it is impossible for anyone to use the shoulder of the grooves as a means for driving off the nut with a chisel or screwdriver. Furthermore, the nut is case-hardened and a pipe wrench or pair of pliers simply slip off if an attempt is made to remove the nut with



them. Reference to the illustration makes the construction of the nut quite clear.



Uniform display of Chicago Nash dealers designed to promote winter sale of cars

“Winter Week” Stimulates Sales

REALIZING that the Holiday season holds unappreciated advertising possibilities for merchandisers of automobiles, Nash dealers in Chicago promoted “Winter Week”.

Throughout the seven days ending last Sunday, the Nash Sales Co. of Chicago and its 24 dealers presented holiday showrooms and window displays to the public, featuring the comfort, safety and convenience of driving a modern automobile in the winter months.

The week before the campaign opened, attractive full page advertisements were carried in Chicago newspapers, setting forth reasons why the potential buyer should not delay his purchase until spring, as has been so often the custom in former years.

Among the advantages cited in the advertisements were that the Duco finish is impervious to snow, sleet or ice; that full balloon tires cushion the chassis against road racking from the pitted and bumpy streets; that the improved carburetor assures instant starting; the overlapping door construction insulates the body against draft; that the Nash type four-wheel brakes prevent skidding on icy pavements; improved heaters keep cars warm in zero weather; and weather stripping makes enclosed bodies impenetrable.

The dealers further assured the public that their investments would be protected because there are no impending body changes. Extra inducements were offered for the old car in the advertisements. The dealers told the public that their used car stocks were low and that more good cars were needed. A special Christmas offer for the old car, with holiday terms on the balance, was made by the 25 firms that took part in the campaign.

H. T. Hollingshead, president of the Nash Sales Co. is of the opinion that few outside the automotive industry realize the tremendous strides that have been made in increased comfort and safety of winter driving. “Nearly every major advancement of the last three years has

helped to establish the motor car as a practical all-year means of transportation,” he declares.

“The inconveniences of the old style car have been so numerous that many motorists have formed the habit of waiting until spring before buying their new car. Now these conditions are completely transformed. Besides four-wheel brakes, eliminating skidding, improved heat devices which insure instant starting and special finishes that are impervious to sleet or sudden temperature changes, there has been remarkable progress in body designing.

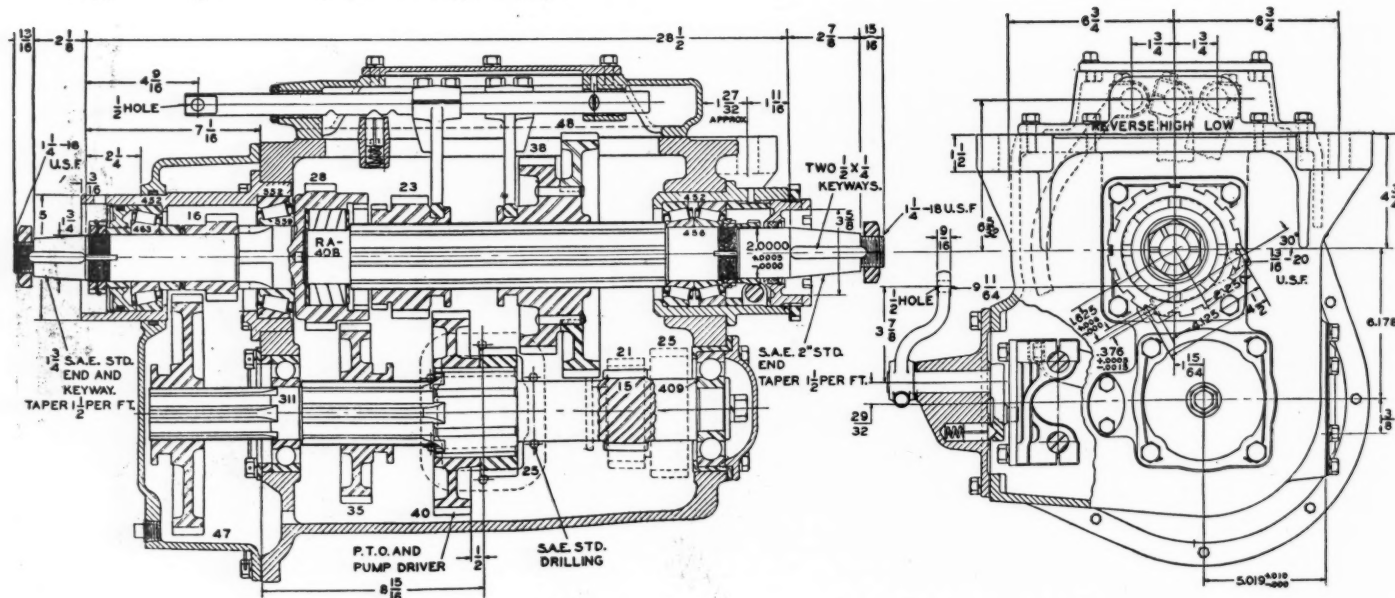
“Doors on Nash bodies are fitted with overlapping edges, heaters have been made more efficient and dependable. Balloon tires have proved their superiority over the high-pressure types not only in riding qualities but in protection to the chassis against road shocks.

“It is our belief that the public knows about these improvements but has not yet fully appreciated how completely they revolutionize winter driving.”

On the first day of the special exhibit and during the entire week the Chicago showrooms were crowded. A uniform display pictured at the top of this page was used in every dealer’s show window.

Before the week opened, a “teaser” window display was shown by each dealer. Painted on the window were the words: “Winter Week Is Coming” and the window was blotted in with opaque blue. Upon the opening day, the blue paint was washed off and an attractive winter setting as shown above, was visible to the passerby.

“Our normal December business is already being greatly increased as a result of ‘Winter Week,’” Mr. Hollingshead said. “It was purposely staged at a time when sales effort and buying activity are supposed considerably to lessen. The reason for this slackening of business in December in former years has been the general belief in the discomforts and inconveniences of winter motoring. That is exactly what we aimed to overcome.”



Sectional view of the model 70 7-speed 5-ton truck transmission made by Brown-Lipe Gear Company

Brown-Lipe Adds 5 Ton Truck Transmission

ONE of the recent additions to the products of the Brown-Lipe Gear Company, Syracuse, N. Y., is the model 70 7-speed main frame type of transmission. This gearset, made especially for 5 ton trucks will be shown for the first time at the American Road Builders Show to be held in Chicago January 11-15.

The model 70 is made with a two speed countershaft giving the high and low range of four forward and one reverse speed with an over drive on the high range. It is made with an overhead

shifting device and a power aperture is fitted. The main shaft and countershaft gears are made of 3.5 per cent nickel steel and whereas other Brown-Lipe transmissions use a square main shaft the model 70 is made with a splined main and countershaft. Ball bearings are used on the countershaft instead of roller bearings.

The layout of the bearing on the rear end of the main shaft departs from usual practice in that a double Timken bearing is placed in a separate housing to

withstand the thrusts and heavy loads.

The model 70 transmission is fitted with the following gear ratios from which it will be seen that a low low is afforded which makes possible a quick return by the truck.

Ratio of Change Gears

High Range		Low Range	
Rev.	4.76 to 1	Rev.	11.19 to 1
1st	4.00 " 1	1st	9.40 " 1
2nd	1.90 " 1	2nd	4.46 " 1
3rd	1.00 " 1	3rd	1.69 " 1
4th	.71 " 1	4th	1.00 " 1

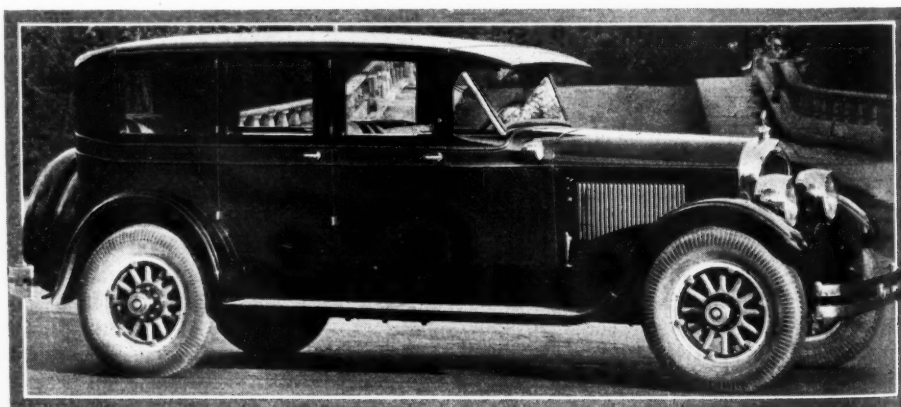
Randall Valve Guide

Announcement is made to the trade that John C. Hoof & Company, 157 W. Illinois Street, Chicago, have been appointed exclusive national sales agent for the Randall valve guides. These guides have been sold for equipment purposes, but are now to be sold to the replacement trade. They are made of close grained cast iron, machined all over and come in the plain or self lubricating type. In the latter helical grooves with compressed graphite flush with the bearing surface, lubricate the valve stem.

ABOUT BALL BEARINGS

The Fafnir Bearing Company of New Britain, Conn., manufacturers of Fafnir Ball Bearings is issuing a booklet called "Correct Mounting and Care of Ball Bearings for Automotive Service." The booklet has many illustrations and shows the cor-

Marmon Has New Body Model



The latest in the Marmon line is the seven-passenger sedan DeLuxe which is shown above

rect and incorrect methods of mounting and removing ball bearings. The Fafnir

Bearing Co. will be pleased to send a copy of the booklet to anyone interested.

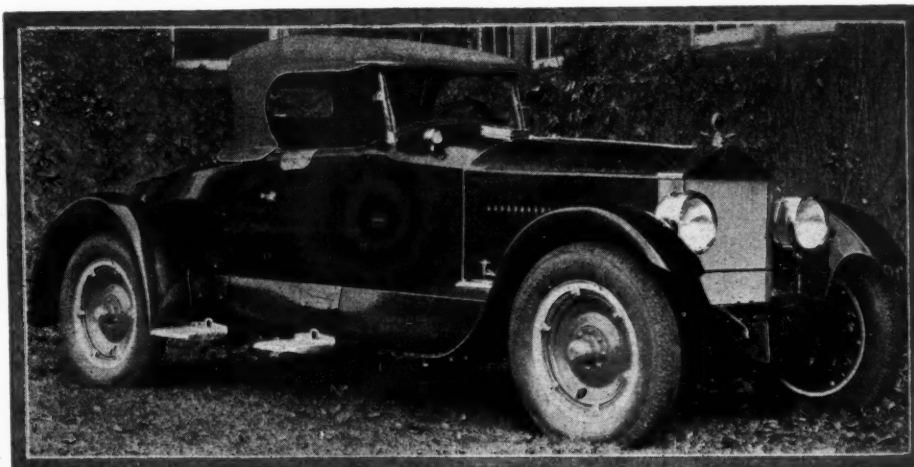
Roamer Eight Offered in Nine Body Styles

A RECENT addition to the field of eight-in-line models is the Roamer 8-88, built by the Roamer Motor Car Co., Kalamazoo, Mich. The car is custom-built and as is usual in such cases, upholstery and paint are largely optional with the purchaser.

The 8-88 is made with a standard wheelbase of 132 in. although 136 and 138 in. are available for special models. Tires are 32 by 6.20 balloons and Lockheed hydraulic four wheel brakes are fitted.

The engine bore and stroke are 3 $\frac{1}{8}$ by 4 $\frac{1}{2}$ in. respectively giving a displacement of 287.3 in. Other engine specifications include; force-feed oiling; water pump cooling; chain drive on front end; Swan design intake manifold and lightweight pistons with four rings per piston. The clutch is a Borg & Beck and in unit with it is a transmission in which the gears are constantly meshed.

Many colors are standard and special



One of the models of the 8-88 Roamer. This is the two-passenger speedster. Color is optional with purchaser

colors are available at additional cost. The body styles include a five-passenger standard tourer; five-passenger sport; two-passenger speedster; 2-4 passenger roadster; five-passenger sedan; five-passenger special sedan; seven-passenger sedan; three-passenger cabriolet and four-passenger brougham.

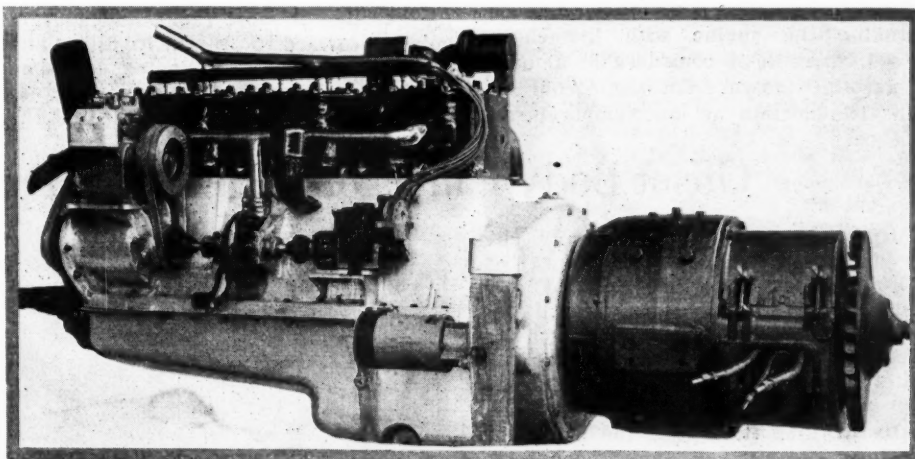
Tillings-Stevens Gas-Electric Drive Buses Introduced in This Country

TILLINGS-STEVENS design of gas-electric drive buses is being introduced into this country for the first time by the American National Omnibus Corp. who are the sole licensees for Tillings-Stevens Motors, Ltd. of England. The assembly of four chassis of this type has just been completed by the Gray Mfg. Co., holding the exclusive manufacturing rights.

Except for the English built electrical units, the chassis are an American product differing in principle from the General Electric Co.'s gas-electric drive buses in that it applies power from main electric motor through a propeller shaft to a conventional type of rear axle whereas a separate drive in the form of two motors each connected to a rear wheel are employed on the General Electric chassis.

Because there is no positive mechanical connection between the engine-generator unit and the electric motor which actually operates the bus, it is a simple matter to vary the wheelbase length to take different types of bodies. The chassis is so constructed that it can be operated without the body, the latter being supplied as a separate and independent unit.

A four or six cylinder Waukesha high compression bus engine of the detachable "L" head type with the Ricardo combustion chamber furnishes the primary motive power. Forming a unit with the gasoline engine by being bolted to the



Power plant of the Tillings-Stevens bus. This is a Waukesha 6 cylinder engine to which the electric generator is connected

bell housing, the electrical generator is connected direct through a patented spring drive employing two leaf springs located in the engine flywheel thus providing a flexible and resilient drive. This type of coupling permits of the generator being removed or replaced without disturbing the drive.

MOVEABLE BENCHES AID SHOP OPERATIONS

In the service station of the Howard Automobile Company in San Francisco

there are special movable benches which have been equipped with a drill press, emery wheel, and a combination valve facer and seater, each having an individual electric drive, current being provided by extension cords. The drill press is provided with a special clutch to fit the valve cage for the purpose of cleaning carbon. The emery wheel is a combination emery and buffer, the buffer being used for cleaning valves, spark plugs, and the emery wheel for grinding tools.

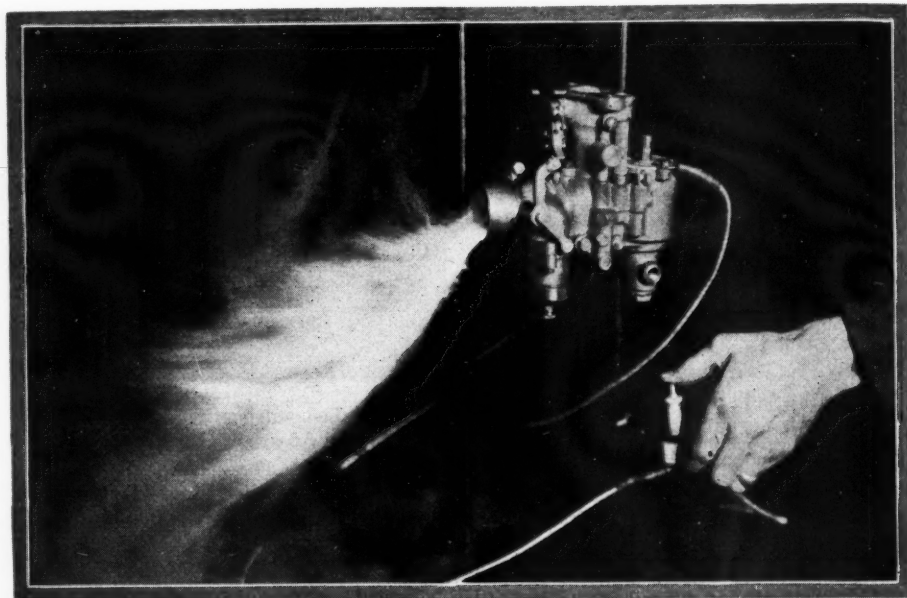
Chrysler Has Device to Facilitate Cold Weather Starting

TWO new devices, a fumer and a manifold heater, to facilitate starting in very cold weather are now fitted on all six cylinder cars shipped from the factory of the Chrysler Corp.

These developments in combination bring the engine performance in winter up to practically the same standards of operation as during the summer months. In addition, crankcase oil dilution is reduced and improved fuel economy are claimed. Before the improvements were fitted to the cars, exhaustive tests were conducted by Chrysler engineers to prove their efficiency under the most severe conditions. In one case of the tests a stock engine and battery were placed in a cooling chamber for 20 hours with the temperature below zero. After this period, using standard gasoline, a successful start of the engine was made.

The primer or fumer is of simple construction, consisting of a double heating element and asbestos blocks enclosed in a brass sleeve. At the bottom of the sleeve there are two openings into which the gasoline is admitted. On the top is a perforated grid through which the gasoline fumes escape after contact with the heating element and from here escape to the body of the carbureter. The unit is placed in a well at the bottom of the carbureter.

Briefly, the action is as follows: When cranking the engine with the choke closed, there is a considerable amount of gasoline drawn from the carbureter jet. The suction at low temperatures,



This shows the fumer attached to the Chrysler carbureter, the wires leading to the switch mounted on the instrument board

however, is insufficient to lift it up into the combustion chamber. Therefore, the gasoline drains back into the well in which the fumer is placed and fills it up to about half the height of the heating element. At this level, the heating of the gasoline is most rapid, and a drain hole is provided to prevent its filling any higher. To give the heating element time to heat and vaporize the mixture gradually, the unit is so constructed that the

gasoline attains its maximum level slowly. The fumer is operated by means of a switch on the instrument board.

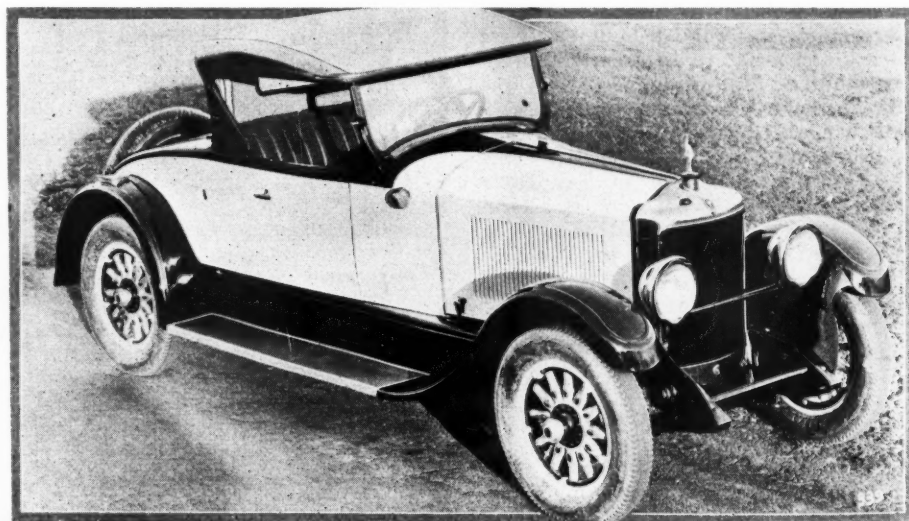
The other device for heating the incoming gases consists of a valve controlling the flow of heat from the exhaust manifold to a jacket surrounding the intake manifold providing a rapid, uniform heating of the mixture. A control on the instrument board operates the valve.

Offset Body Panels on Diana Give Distinctive Effect

THE Moon Motor Car Company announces something new in the way of a Diana roadster finished in black and white. As in other Diana models for 1926, moldings have been eliminated by offsetting the body panels at approximately the same location formerly occupied by the moldings, the offset eventually working itself over the cowl and the hood, forming an arrow head with its apex at the rear end of the radiator shell.

The upper portion of the offset panel is done in jet black, satin finish Duco. In contrast the lower panels of the body are finished in snowy white Duco. The beveled edge of the dividing line between the offset panels and the lower panels is striped with a contrasting color, green or orange, being optional. The arrow head on both the cowl and the hood is done in jet black. The hood louvres are striped in black while the entire rear deck of the car including the back of the rumble seat is black.

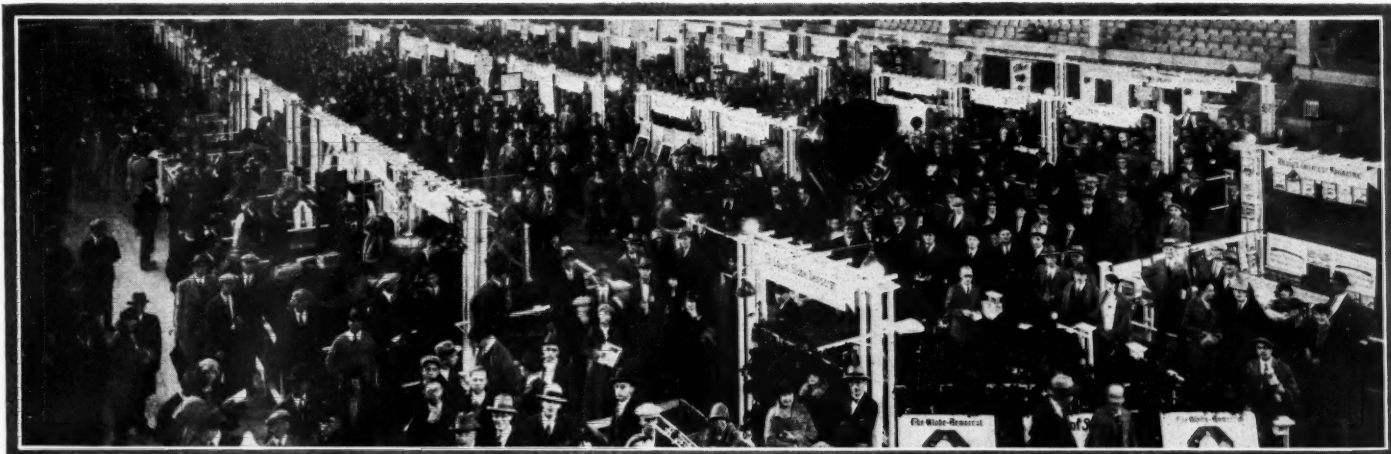
Equipment includes nickel plated headlights and cowl lamps of special design to conform to the line of the Diana radi-



Diana Eight roadster with satin finish black and white Duco. Molding has been eliminated by off-setting the body panels

ator shell and hood, silver finished door handles of special design, seven-inch body rails on the rear deck just behind

the gypsy curtain, two aluminum steps which afford easy access to the rumble seat, a removable tailored cape top.



Anyone who doubts the popularity of radio need only visit one of the shows which are held in different parts of the country. An example of how they "pack 'em in" is found in the crowd that attended the St. Louis exhibition, pictured above

Cleveland Police Use Radio in Work

CLEVELAND, OHIO, Nov. 27.—Jacob Graul, chief of police here, has announced that the department has adopted radio equipped police cars as an aid in the apprehension of criminals. This action followed installation and tests of radio receiving equipment in the police chief's private car. The radio equipment is to be installed in the seven other flying squadron department cars. Each of these cars will carry two receiving head sets and a loud speaker in addition to batteries and other radio mechanism. A sending station of special wave length will broadcast orders from police headquarters to the flying squads at the precincts or on the road.

"One of the chief advantages of the use of radio in the police cars," declared the Cleveland police chief, "is that it will enable us to pick up our squadrons anywhere, at a moment's notice and concentrate them to handle emergency work at a given point. It will enable us to cut down the elapsed time between the commission of a robbery or other crime and the pursuit of the criminals."

The Cleveland police plan calls for a radio head-set for use in the front seat. Another receiving head-set is installed in the tonneau of the car. A loud speaker installed under the cowl of the car and pointed toward the rear can be used for broadcasting to all passengers of the car. Tests of the police equipment showed it possible to hear clearly while the car traveled at a speed of 54 miles an hour.

The Headquarters Broadcasting Station, being equipped for sending by special wave length, will permit police to communicate from headquarters to flying squads without outside interference or tuning in by outside parties.

Collapsible Aerial

THE AERIAL made by E. D. LaSalle, 61 Washington St., Batavia, Ill., is in the form of an umbrella and contains 85 ft. of insulated wire. The feature of this antenna is that it is collapsible and can easily be erected or taken down.

Dallas Business Booms

DALLAS, TEXAS, Nov. 27.—Radio dealers in Dallas and trade territory, as well as jobbing houses, find it is not so much the interesting of a customer in radio but more of assuring him a suitable set for his money according to Hal Corey, secretary of the Dallas Retail Radio Dealers' Association. Mr. Corey says practically everybody is buying radio sets and they want something that will deliver the goods. The business in Dallas, which has been off for some time, is hitting on all tubes now. There are a score of retail establishments handling nothing but radio in Dallas, as well as ten wholesale concerns which distribute sets and parts to the entire Southwest from Dallas.

Mr. Corey said radio apparatus comes to Dallas in car lots daily. He declares that music dealers in all sections of Texas have taken on radio lines and that half of the automobile accessory dealers of the state handle radios.

According to Mr. Corey the volume of radio business done in Dallas this year will pass the \$5,000,000 mark.

Cincinnati Show Success

CINCINNATI, O., Nov. 28.—After several postponements on account of conflicting events at Music Hall, the Radio Show of the Cincinnati Electric Club's radio division was finally held from Nov. 17-21. It was a great success and in the opinion of radio producers, jobbers and distributors the best radio show ever held in this region.

The success of the show was not so much in the attendance, which fell off towards the last day, but from the large percentage of buyers who were in the crowds and the numbers of orders for radio sets, tubes and general radio accessories which were taken by exhibitors. The crowd itself was not to exceed 26,000 for the five days. Radio distributors from all parts of the middle west were in attendance and numbers of jobbers large and small who represent

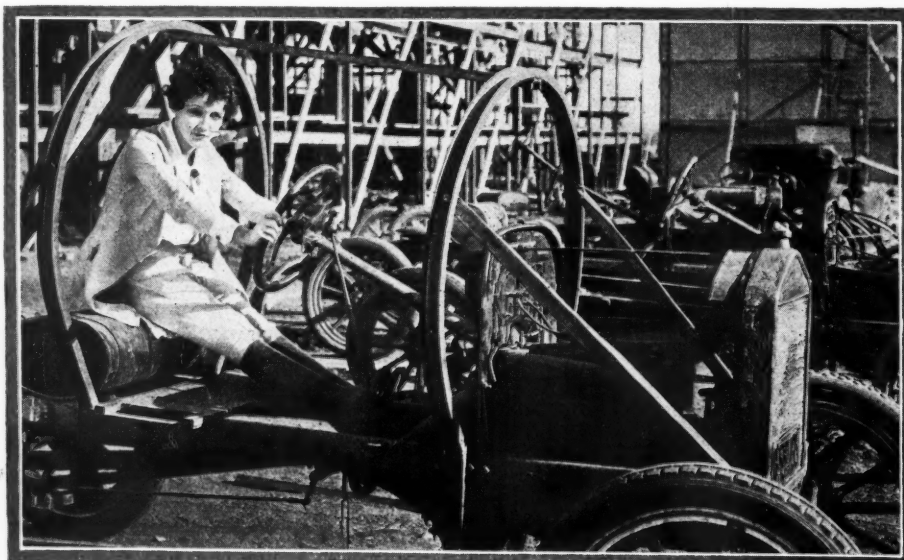
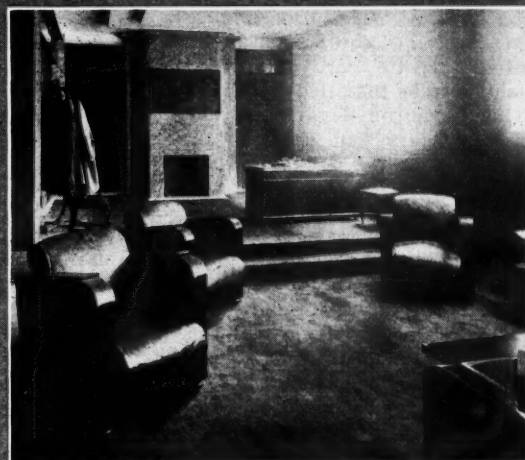
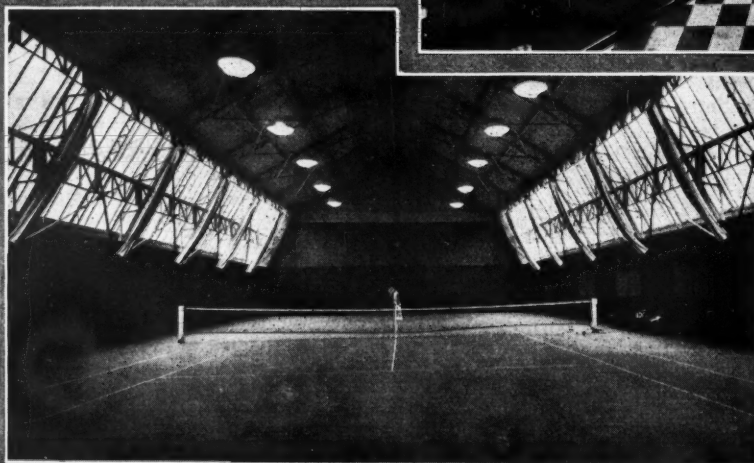
the radio producers and manufacturers in Cincinnati and vicinity, together with an exceptionally large number of dealers who represent jobbers of the Cincinnati metropolitan district were on hand. Radio jobbers came from as far away as Boston and Canadian points and there was hardly a jobber in the five states around Cincinnati who was not in for at least a day or so.

The big attraction for the public was the mammoth radio set cabinet, said to be the largest ever constructed, part of which was used for the stage where the broadcasting was given. This cabinet was 36 feet long, 21 feet wide and 18 feet high and a part of the front panel was arranged with a dim light in the rear which gradually grew more and more brilliant until a curtain lifted and disclosed the broadcasting stage. The inner part of the cabinet was fitted with sound proof padding in the same manner as a broadcasting studio and gave the public an excellent impression of the manner in which stations broadcast their programs. Artists from the WLW, Crosley Radio Corporation, WKRC, Kodel Radio Corporation and the WSAI station of the U. S. Playing Card Company gave programs nightly and there was also an amateurs' contest which attracted considerable notice.

New Station at Hartford

RADIO is now well under way with Hartford, Conn., dealers. All indications point to a big volume of business this autumn and winter. New equipment is coming into the field and all dealers are making every effort to turn in a big volume during the winter season. The situation insofar as sales are concerned is being helped materially by the Travelers Insurance Co. which opened a broadcasting station a few months ago, WTIC hooks up with WEA and some first calibre entertainment is promised for the winter. Dealers say this determination to hook in with New York on high class material is doing much to better the sale of equipment.

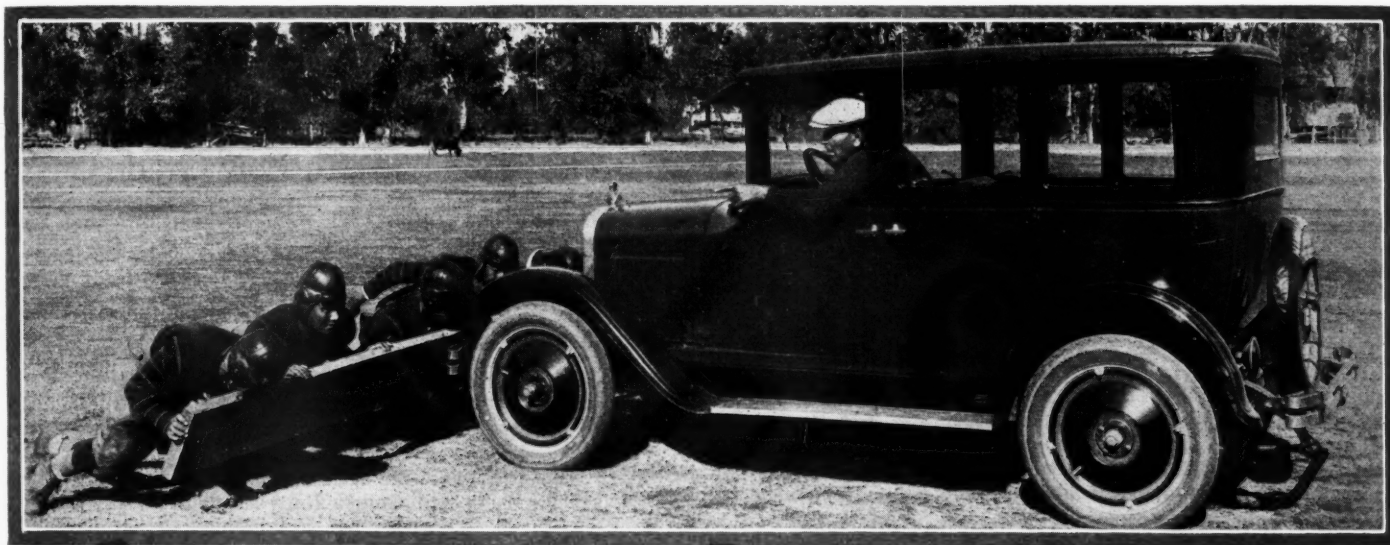
MOTOR AGE'S PICTURE PAGES



OMNIPRESENT. Helen Foster, leading lady of Educational-Lupino Lane Comedies, trying out the Ford polo car used in the Educational-Mermaid Comedy "Lickety Split."

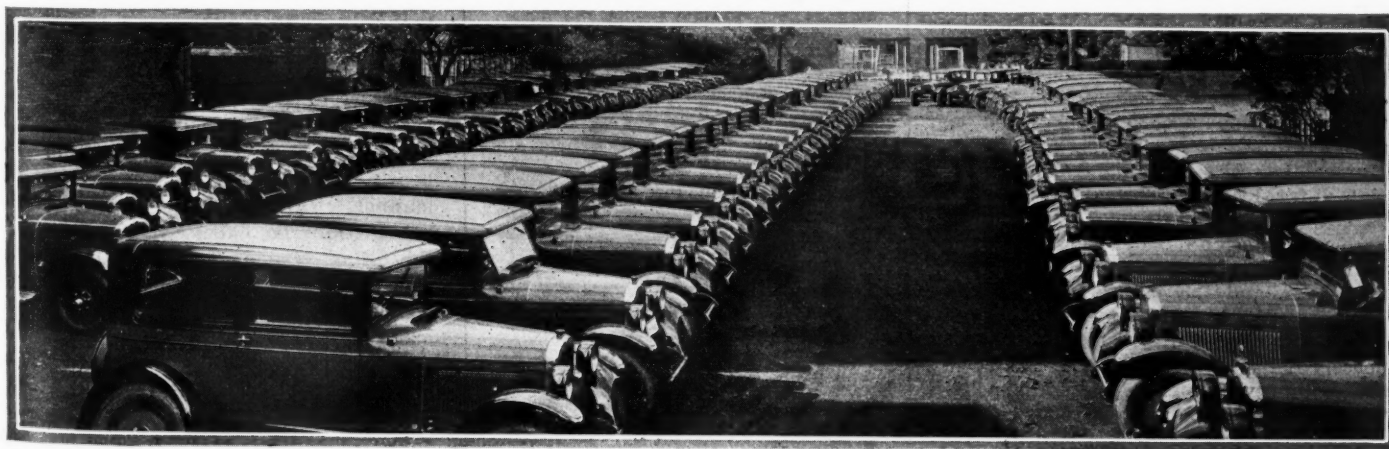
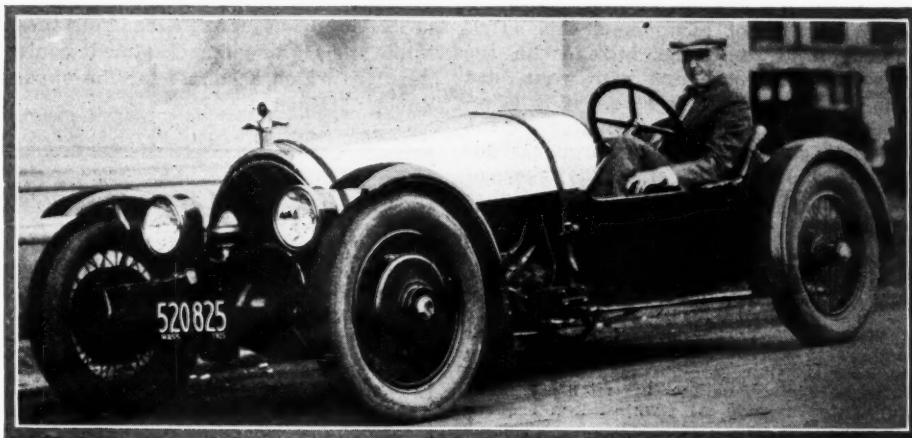
THE LAST WORD. Interiors of the new \$300,000 Paris home of the Chrysler distributor for France, which also sells French makes. Upper left: American bar hand-somely decorated in old English oak; upper right: View showing exhibition hall where cars are displayed in a tempting manner, with accessory gallery in background; lower left: One of the four tennis courts which are provided as an added attraction for the amusement of clients; lower right: The luxurious office of the president of the St. Didier Garage which has provided this most attractive setting for the automotive products it handles.

OF AUTOMOTIVE INTEREST



RESISTANCE PLUS. Coach D. Pierce, who directs the team of the Sherman Indian School, Riverside, Cal., attaches a long plank to the front bumper of a Chevrolet sedan, places the car in low gear and slowly pushes his husky linesmen down the field. This method, he says, teaches the players to dig in and to hit the line low. Now somebody page the "Four Horsemen."

A DISTINCTIVE CAR. A. A. Nichols of Waltham, Mass., freshman at the Massachusetts Institute of Technology, has designed a front-drive car in which many Ford parts are used and is being kept busy explaining its construction.



THE FRUIT OF SALES EFFORT. The Reeke Nash Motors Co., distributors in Cleveland, Ohio, recently delivered 80 cars in that city in one week. This company has found it necessary to increase its operating area to 100,000 sq. ft. of space, 60,000 of which is under roof. The photograph was taken in the immense yard back of their Euclid avenue headquarters.

The READERS' CLEARING HOUSE

Questions and Answers on Dealers' Problems

**BUILDING • ELECTRICAL • FLAT RATES
SHOP • LEGAL • PAINT & TRIM • ACCOUNTING**

Using Extra Set of Spark Plugs on Essex

Q.—We notice in an issue of *MOTOR AGE* where a man in Canada had bored the head of an Essex to put in an extra set of spark plugs. We would like to know how this was done without drilling through the water jacket or disturbing the water circulation.—K. A. Miller, Box No. 1115, Brawley, Calif.

It is necessary to drill through the water jacket and put in bushings. We are giving you by separate letter the name of a man who has done considerable work along these lines and from whom you can get more detailed information.

Q.—We would like to know if it is possible to mix one pint of castor oil with eight gallons of gasoline so as to lubricate the piston and cylinder walls and yet not have enough oil to foul up the plugs. This question has reference to an Essex which has been changed for racing and on which we are having trouble due to missing and cutting out at high speed. We would like to know if there really is any value in mixing castor oil in the gas for speed.

We would not recommend this. Cylinder oil is sometimes mixed with the gasoline in accordance with your idea but for a different purpose. It is effective in breaking in a new engine for the cylinder walls are thus thoroughly lubricated. It has the effect, however, of carbonizing the engine and plugs so that cleaning is soon necessary.

A Special Coil for High Speed Ignition

Q.—We have trouble with the missing as previously stated in spite of the fact that we have double springs on the valves and extra springs on the Delco ignition to help the points open faster. We also have a Winfield carburetor with air pressure, also a gear oil pump taken from a Chalmers.

The trouble with missing at high speed is due to the fact that the points are not in contact long enough to allow the current to build up in the coil. One way of remedying this condition would be to use an open circuit coil instead of a closed circuit. You might try an Atwater Kent open circuit coil such as formerly used on either Franklin or Hupmobile. The Franklin coil being designed for 12 volts, however, would apparently make the Hupmobile coil preferable. This coil will draw from 10 to 20 amperes with the ignition switch turned on and the interrupter contacts held together, whereas the normal closed circuit coil draws five or six amperes. This means that at low speed the points will spark very badly and will burn if the engine is operated for any length of time at low speed. Accordingly if it is necessary to operate under both low and high speed conditions it would be well to use a resistance or ballast which can be obtained from any good ignition shop and this could

be connected in series with the coil. Then for high speed operation a switch could be used with wires connected to both sides of the ballast coil so that it could be shorted out for high speed operation. If there is any question about the way to connect this up we would be glad to submit a sketch giving the circuits.

Q.—We do not know whether the camshaft is a stock or special one, but we are having trouble due to the heads of the valves jerking off when the engine is run at high speed. This applies particularly when idling.

A tulip or semi-tulip type of valve should be used, preferably one made of a high grade alloy steel.

Sometimes Left Is Right

Why is it on Stromberg carburetors that you have to turn the idling adjustment to the right to make the mixture richer, but turning the high speed adjustment to the right makes the mixture leaner.—Chicago Mechanic.

The idling adjustment controls the air while the high speed adjustment controls gasoline which accounts for the opposite effect obtained.

The Readers' Clearing House

THIS department is conducted to assist dealers and maintenance station executives in the solution of their problems.

All questions are answered direct by letter, so the name and address should be given in full. This saves waiting for the answer to be published, which sometimes occurs several weeks late, depending upon the space available.

Readers' names will not be published with articles, if a request to this effect is received with the letter.

Inquiries not of general interest will be answered by personal letter only. Emergency questions will be replied to by letter or telegram.

Also state whether a permanent file of MOTOR AGE is kept, for many times inquiries of an identical nature have been made and these are answered by reference to previous issues.

Addresses of business firms will not be published in this department but will be supplied by letter.

Technical questions answered by B. M. Ikert and A. H. Packer; Legal, by Wellington Gustin; Paint, by G. King Franklin; Architectural, by Tom Wilder; Tires, by a Practical Tire Man; General Business questions, by MOTOR AGE organization in conference.

New Cars That Knock With Low Grade Gas

Q.—We have had several new Fords come back into our shop for what seems to be a carbon knock. We removed the head and found very little carbon, not enough to cause a knock, in our opinion. After this slight amount of carbon was scraped off the car ran all right for about two days and then the same knock came back. We have had the same trouble on several of the late cars and do not seem to be able to remedy it. We would like to have your opinion as to the cause and remedy.—Hugh Gordon, Healdton Motor Co., Healdton, Okla.

We believe this is a piston slap caused to some extent by present day gasoline which has a tendency to detonate. We would suggest your trying special fuel of some sort, either benzol or high test gasoline or some of the doped fuels which are on the market. If these overcome the condition it shows that detonation is partially responsible. Another thing to do would be to check up the clearance between the pistons and cylinders with a thickness gauge. If this is not appreciably over .004 inches there is nothing you can do unless you wish to try an inner ring in the second and lower ring groove. For example on Willys-Knight engines using aluminum pistons where there would otherwise be a tendency for the piston to slap when cold an inner ring is used to prevent this occurring.

Loose Bearings Cause Oil Pumping

Q.—Could loose main and connecting rod bearings on a model 59 Cadillac cause excessive consumption of oil. The cylinder blocks have been rebored and new pistons and rings fitted. Piston and rings were given the proper clearance and good material was used. Reboring was done by an expert machinist with expensive grinding equipment. The oil gauge shows a low pressure reading.

Loose bearings will cause excessive oil consumption because too much oil is splashed to the cylinder walls and will get by in spite of pistons and rings. On Cadillac cars the connecting rod bearings cannot be taken up in the usual manner. This statement applies to the blade rod. To check the operation of the oiling system, it is often considered desirable to use oil under pressure and connect from a tank to the oil pipe of the engine so that oil flows from an outside source instead of from the regular oil pump. The lower pan can then be removed and a mechanic under the car with a light can see how fast the oil is dripping from the various bearings. The oil should drip slowly from each bearing and should not come in a regular stream from any one.

Planning Your New Building

By TOM WILDER



"Get Competitive Bids When You Build"

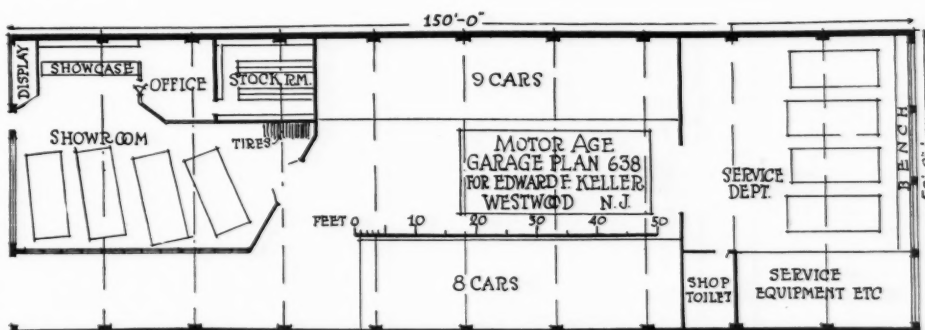
Q.—We are planning to erect a garage containing showroom, garage and storage space on a lot 50 by 150 with gas tanks in front. We would appreciate any suggestions you might make for a proper proportioning of building as well as arrangement in order to utilize the space to the best advantage. The owner of the land has a plot 100 by 150 and suggested that if he could put up one large garage on the plot, selling one half to us and the other half to someone else he could build and sell them much cheaper. The plot is on a main road and faces west. We planned to show accessories in the front of the showroom and have the building set back so that gas customers could drive in off the street. Any suggestions would be greatly appreciated.—Edward F. Keller, Westwood, N. J.

We are enclosing a pencil sketch showing a layout for your proposed garage. We would not favor a filling station in front of this building for the reason that a good filling station cannot be built on so narrow a space. Only the small cars could make the turn and get out without backing, and it would be especially undesirable with a front entrance as you must have. You should either get a corner lot or one that is 60 to 70 feet wide.

Savings Effected Through Bids

Regarding the lower price, by having two buildings put up together we do not believe there is much in this as there would be practically no saving except possibly a party wall and the cost of building runs about so much per square foot. The best way to make a saving is to get several competitive bids and then take the lowest. You will be surprised to find that there is sometimes a difference of nearly 50 per cent in the estimates of different contractors, even when bidding on the same specifications.

There is not much choice in the layout of a building on a lot of this sort, the display space here being very limited and if it is at all possible we would advise you as above, to get a corner lot, and then you can have an entrance on the side and use the whole frontage and part of the side to display new cars and accessories. A side street always offers better parking facilities and less congestion around the entrance. If there is a good wide alley behind this lot it would help out as then you could get along without the front entrance using the whole frontage for showroom. You could place the shop just back of the showroom where it would be handy to the stockroom and use the rear part for garage purposes.



A building of this size requires material in large enough quantity to insure prices as low as would one double the size

Not Enough Oil

Q.—We have a few questions regarding a 6-46 1917 Paige using a Continental 9N engine. This engine gives perfect satisfaction only for the fact that it will destroy a rod bearing about every 5,000 miles or so. It has done this five times in 25,000 miles, two years driving. The bearings do not seem to get hot and run as if dry of oil and the motor has plenty of oil and the pressure on oil gage is from 2 to 5 pounds each time. The bearings seem to crack up and fall out in pieces and does this in about one mile. The trouble has never happened to the same rod the second time.—Wilson W. Culver, 8 Alvena Avenue, Cortland, N. Y.

We have taken this question up with the local Paige-Jewett maintenance organization and they are of the opinion that the connecting rod bearings do not have sufficient dip in the oil. With each connecting rod at the bottom dead center position the scoop on it should extend into the oil $\frac{1}{8}$ of an inch. If the car is to be used for driving at high speed for any length of time it is advisable to increase its dip to $\frac{1}{4}$ of an inch. The increase in dip may be secured by blocking up under the sub-base inside of the regular oil pan or crankcase lower half. Place a gasket of the necessary thickness between the sub-base carrying the trough and the regular oil pan and then gage the amount of dip.

Increase the Dip

Q.—Would it be practical to install a Dodge Brothers oil pump on front of the timing gear case and drill the crankshaft for pressure lubrication? This engine does not smoke or use too much oil nor does it ever run hot. I drive the car from 35 to 40 miles per hour most of the time.

It will be possible to install a different pump and to drill the crankshaft but you will find that the cost of drilling the shaft alone would run in the neighborhood of \$40. Our suggestion is that you increase the dip and that you make sure that the connecting rod lower bearing shells are properly fitted to the rod

and cap before they are fitted to their respective crankpins. The fact that the engine does not smoke strengthens the impression that the rods do not have sufficient dip. When checking the oil dip we would advise that rods be checked individually so as to get it the same all over.

AUTOMOTIVE FACTS OR FABLES

Q.—I have heard it claimed that leaky valves will have a tendency to cause a motor to pump oil. What is the theory behind this conclusion? — West Coast Reader.

Leaky valves will cause poor combustion. Poor combustion may fail to burn the oil which works past the pistons and consequently may make it appear as if an abnormal amount of oil is getting into the combustion chamber.

Q.—Why should a cool running engine be hard on an exhaust valve?

With a certain carburetor setting the mixture will be leaner when the engine is cold. A lean mixture burns slowly and is still burning when the exhaust valve opens. For this reason and because the flame is an oxidizing flame there is more tendency for the valves to burn when the engine is cold.

May Be Poor Ignition

Q.—It is claimed by the makers of a certain motor car that an air leak in the exhaust manifold system, as for instance at the joint between the exhaust manifold and the exhaust pipe will cause popping back in the muffler. Why should this be so?

This does not seem to be a possibility unless poor ignition or some other similar condition is permitting raw fuel to get into the muffler. If this is the case the addition of air might make it combustible and then additional flame coming from one of the cylinders might cause an explosion in the muffler. If this theory were universally correct there would be explosions in the muffler when the muffler cutout is operated.



Defeating Old Man Wear and Tear

Here's the System on Spiral Bevel Adjustment

Q.—I am having trouble with a Jewett 1924 model differential. I have put in a new gear but cannot get the noise out of it. When I step on the gas when the car is moving it gives a singing noise to it and when a let up on the throttle the noise is gone. Have tried to get this noise out but did not have very good luck. I know the adjustments on it but I do not know if it is too close or too far apart to make the singing noise and when I get the singing noise out it makes a noise when the car slows up.—North Dakota Reader.

If at any time the rear axle has run without oil it may be that wear in the bearings has occurred so that a perfect adjustment is very difficult to get. If the axle is taken apart the bearings should be laid on a surface plate to see if there is any movement of the inner race possible. That is, there should not be any play sideways as an attempt is made to move the inner race back and forth. If the bearings are o. k. then the metal pinion and the metal ring gear should be rolled, one on the other to note the position which the pinion takes and to see whether it sticks or runs freely. The pinion and gear should then be assembled in the axle as nearly as possible in the same position, allowing from .005 in. to .008 in. backlash between them.

Place the axle under the car and at the same time paint the gear teeth with a fine coat of white lead. After this is done jack up the rear wheels and start the motor, throwing transmission into high gear, also throw in your brakes, which must be equalized so you get about the same load on each wheel. This will wipe the paint off the teeth. You may find a condition as illustrated in Fig. 9 in the sketch on this page. The shaded portion represents the contact of your gear. That means that the load is pulling on this portion of the teeth. In that case, move your pinion toward the gear, until the pinion wipes off the paint as shown in shading on Fig. 4.

Fig. 4 illustrates the most desirable condition where the contact is slightly heavier at the toe or small end of the tooth than it is at the heel. This is desired, due to the fact that, when the load is applied, the pinion has a tendency to lift and apply a greater load at the heel or large end of the tooth. If you have a contact as illustrated in Fig. 8 or where the load comes on the base or flank of the gear tooth, it means that the pinion is too far in and should be backed out. Gears set up in this way, are sure to be noisy. If the contact is as shown in Fig. 8 the pinion is too far in and if the contact is as shown in Fig. 9, it is too far out.

If the contact on tooth appears as shown in Fig. 6, it means there is too much backlash between ring gear and

pinion. This requires moving the ring gear toward the pinion and if this is not done, the extra heavy pressure at the large end of the tooth will cause it to break off. If contact is too heavy at the small end as shown in Fig. 7, the small end of the tooth will eventually break off.



FIG. 1

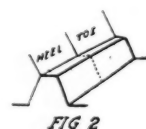


FIG. 2



FIG. 4



FIG. 6



FIG. 8



FIG. 3



FIG. 5



FIG. 7



FIG. 9

101314

The way the paint rubs off shows whether axle gears are correctly adjusted

AN S. O. S. FOR GAS MASKS

Q.—We have a number of Dodge cars, screen body models. The fumes from the exhaust come up from the rear and cause the drivers to have headaches. We are sure these fumes come from the rear of the car for this reason; if the rear curtain is down the driver is not affected. It is not caused by back pressure through the breather pipe as we have used new rings and the engine has been rebored. It seems to be the fumes from unburnt gasoline, yet the car goes about nineteen or twenty miles on a gallon of gas. We have tried all makes of carburetors, but the trouble has not been entirely eliminated, although one make of carburetor eliminated about forty per cent of the fumes and increased the mileage.—Louis Wanner, 251 Main St., Garfield, N. J.

The fact that one carburetor improved the condition would seem to indicate that burnt gas and not raw gas is producing the fumes. One suggestion is to squirt kerosene into the air intake of the carburetor so as to produce smoke. Then observe the exhaust outlet tracing from the manifold through the exhaust pipe to the muffler and at both front and rear of the muffler to see if smoke is coming out at any point. Observe especially the connection between the manifold and exhaust pipe and between the exhaust pipe and muffler. If there is

Speed Data for Speedometer Testing

Q.—What are the revolutions of a speedometer at 10—25 and 50 miles per hour or about three speeds on popular makes of instruments such as Stewart, North East, Johns Manville, A-C, Warner, Jones, Waltham and Van Sicklen? I wish this information for checking speedometers on the car as I will build a rig with variable speed and master tachometer and connections for the different heads without removing from instrument board. We are often asked to do this so that they may be sent in for correction if necessary.—Auto Electric Shop, Cedar Rapids, Iowa.

On receipt of your letter, various circular letters were sent out and the following information was thus made available.

Speedometer	R.P.M. at 60 M.P.H.
Corbin	2560
Standard (Cent. type)	2000
Standard (Magnetic type)	1000
Stewart-Warner	1009
Waltham	1008
A-C	1008
North East	1026

As these figures are given for a speed of 60 miles per hour you can get the other speed by proportion. For example at 30 miles an hour it would take just one half of this speed or at 10 miles per hour, 1/6 of this speed.

ENGINE CONTINUES TO FIRE

Q.—What would cause a Monroe motor, engine No. 15333, car No. 15361 that has been completely overhauled to fire several times after the ignition switch is turned off. The water circulation is o. k. because the water never boils. This motor is fitted with a Zenith carburetor, both the low and high speed jets being size 90. The timing is o. k. as the motor seems to have plenty of power.—North Side Auto Repair, 2110 N. Michigan St., Kokomo, Ind.

If the ignition switch operates properly it will cut off the battery current and will prevent the ignition coil from firing. Then continuation of firing in the various cylinders will indicate overheating. A projecting piece of metal in a cylinder will cause this condition for it gets red hot. Carbon will also cause this condition. Overheating is further aggravated by a lean mixture and as this carburetor requires a No. 90 main jet and a No. 110 compensating jet, we think that this may be all or part of the trouble. The other specifications are No. 20 choke, No. 50 idling and No. 38 seat. We would also recommend your checking the valves when the engine is hot to make sure you have clearance between the valve stems and tappets.

no evidence of leakage then it might be advisable to put a flexible extension on the tail pipe of the muffler so as to carry the fumes farther away from the car.

Clearing Up Electrical Troubles

EDITED BY A. H. PACKER



Making a Coil Testing Outfit

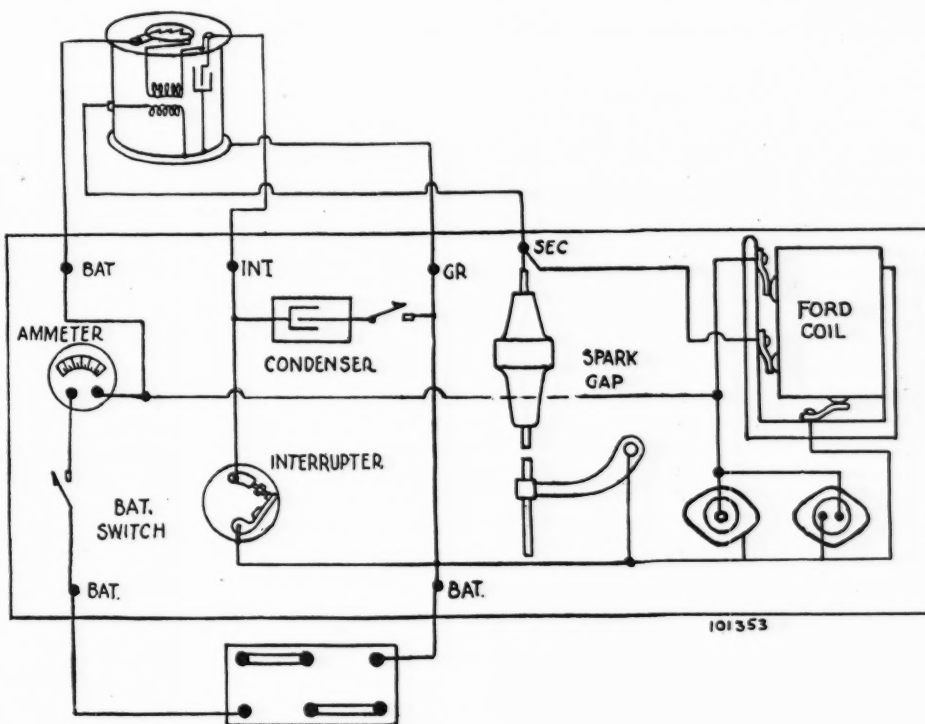
Q.—Will you kindly give me some information as to how to make a home-made tester for a high tension non-vibrating coil. I want to be able to test the coil and also the condenser and also wish for a tester to test Ford coils and spark plugs, also single and double contact lamp bulbs.—Frank Vote, 1359 Palace Street, St. Paul, Minn.

We are showing an illustration of an ignition test board which you can easily construct. It requires the center portion of a spark plug, an ammeter and an interrupter. If you can drive the interrupter by means of belt from a small motor, or by means of a horn motor or by some such method, it will be better than turning it by hand, for you can make an endurance run on any coil which seems to be giving trouble. In the illustration we have shown an ignition coil connected and you will notice that it is necessary to know what is inside of the coil before you can properly connect it.

The coil shown has a condenser in it and the common connection of the primary and condenser should go to the Int. terminal. The other end of the condenser should go to the GR terminal and the other end of the primary which in this case comes from the ballast resistance on top of the coil should go to the Bat. terminal. Where there is a condenser inside the coil the condenser switch shown on the test board is left open, otherwise it will be closed. The spark gap is shown as being adjustable, so that you can determine the greatest distance the spark will jump and also set the gap at $\frac{1}{4}$ or $\frac{1}{8}$ inches for an endurance run. At the right on the test board there are shown two sockets, one for single contact and the other for double contact bulbs.

One Test At a Time

There is also shown at the right a Ford coil setting in a wood frame which has three spring brass clips so that contact is made to the three terminals of the Ford coil. When testing such a coil no other ignition unit should be tested at the same time. You can test a spark plug by opening the gaps wide and putting the spark plug in parallel with the gap. For a good test however, a piece of mica should be put in between the points to see if the spark will jump a greater distance than the normal point setting. Another way is to bend the points apart to $\frac{1}{8}$ inch or more. Such a test board may also be used for testing a high tension magneto armature. Under these circumstances the interrupter is removed and the high tension slip ring connected to the Sec. terminal. The terminal marked Bat. is then connected



An ignition testing outfit may be made up in this fashion. The interrupter is preferably motor driven. Provision is also made for testing bulbs and Ford coils

to the magneto interrupter screw which is replaced in the end of the armature shaft while the GR terminal is connected to the frame of the magneto armature or to the end of the shaft.

The Cutout Worked With a New Armature

Q.—I would like to have you explain something I encountered with a common Ford generator. With the engine running at a fair rate of speed and with normal wiring the ammeter did not show any charge. Taking the wire that is connected from the ammeter to the cutout and connecting it from the ammeter to the generator terminal the indication was from 10 to 15 amperes charge with the engine running at fair speed. However, with the normal wiring, that is the wire put back on the cutout and the cutout points closed by hand the ammeter would show a reading but under no conditions could I make the generator current flow from the ammeter without closing the points by hand. The various cutouts that I used were all in first class condition and they worked all right after a new armature had been put in the generator. I would like to have this condition explained thoroughly. W. R. Moore Garage, Benjamin, Texas.

When the cutout points are not closed by hand it is necessary for the generator to build up without having its field excited from the battery. When a generator has been stopped there is but little magnetism left in the field poles, so that when the armature first starts to turn

it generates a very small voltage. This may be only half a volt or less and it is necessary for this small voltage to send current from the armature to the brushes and through the field winding in order to strengthen the magnetism and generate more voltage.

Accordingly if the brushes are oily or if there is a poor connection in the field circuit or if the wires in the armature or commutator are poorly soldered so that there is a high resistance there will be very little preliminary current flow and the magnetism may not be increased enough to enable the generator to build up. As you overcame the condition by using a new armature, we will assume that the generator had been overheated at some time and the solder had been thrown out from the commutator bars, to such an extent that a high resistance existed. When you closed the cutout points by hand you allowed enough current from the battery to flow to the field winding of the generator to enable the machine to generate 6 volts instead of $\frac{1}{2}$ volt or less, and this higher voltage was enough to start current through the shunt field winding and keep the generator operating after you had once primed it. A thorough test of the old armature on a growler combined with the use of phones to see if there are open circuits in the armature might check up the theory we have advanced.



Motor Age's Flat Rate Forum

EDITED BY B. M. IKERT

Selling Cylinder Refinishing Jobs

EVEN though the shop has flat rates for refinishing cylinders, fitting new pistons and rings, etc., it sometimes is quite a job to sell the customer on the necessity of doing such work.

One shop gets around this by having on hand an old cylinder block cut away to show the interior of the bores, valve mechanism, etc. In one of these bores is left an old piston, rings, valves, connecting rod and so on, showing the sloppy fit of the parts.

In one of the other bores, the latter is reground, a new piston and rings, valves and connecting rod are fitted to show the customer exactly the difference between a cylinder in good condition and one in bad condition. The foreman of this shop says no amount of talking will convince a customer half as much as such a cut-away cylinder block.

The Little Things That Count

Requisitions for parts are a necessity, of course, but it can be overdone. Many shops have found it unwise to have the men make out requisitions for small parts like cotter pins, washers and certain bolts, because the work involved in handling the requisitions is not warranted by the cost of the part.

But, it pays to watch certain things. For example, it is wasteful to hand a mechanic a full sheet of emery cloth when he asks for it. Generally a piece 4 in. square is all he needs. Have it cut into squares that size.

Books on Flat Rate

Meriden, Conn.

To the Editor of MOTOR AGE:

Enclosed please find check for 50 cents for MOTOR AGE's Flat Rate Manual. Can you inform me who publishes flat rate books for Dodge Brothers motor cars and how I can buy one; also who manufac-

Enclosed cars, especially those which operate in regions where roads are dusty, accumulate quite a bit of dirt and foreign matter on the upholstery. This is difficult to clean properly unless facilities are at hand. Many service stations have a fixed price for cleaning the interior of closed cars and make use of a vacuum cleaning process



tures special tools for Dodge Brothers cars. I am going to specialize in Dodge Brothers and Ford repair work. Can you suggest where I can get some advertising material someone has used successfully in a direct-by-mail campaign advertising flat rates. Where can I purchase a book with instructions covering brake adjustments on new types of cars? Any material you will send me will sure be appreciated. Please do not be offended at my battery of questions as I have been saving these up for quite a while.

JOHN DE FRANCIS,

Joe's Brake Service Station.

We do not believe any concern outside of Dodge Brothers publishes a book listing flat rate operations on that particular make of car. Usually the manufacturer of the car compiles the flat rate manual pertaining to his product. However, the MOTOR AGE's Flat Rate Manual sent to you lists practically all the operations you will be likely to encounter in the servicing of the Dodge Brothers car.

MOTOR AGE has published from time to time reproductions of cards, booklets and letters sent out by various concerns to advertise their flat rate service. We cannot direct you to any particular concern and practically all such advertising is prepared locally. There really is nothing very difficult about preparing it. What people are interested in is "what will it cost." To that end you could prepare a list of typical operations, such as valve work, brake adjustment and relining, lubricating chassis, rebushing front axle knuckles and tie rod yokes, etc., and set the price after them. The definite charge is what the motoring public likes. Give them that and they will do the rest.

MOTOR AGE has within the last few weeks run a series of articles pertaining to the adjustment of the brakes on the late models. The brake manufacturers have manuals covering the adjustment of their brakes. We are sending you their names by letter and also the names of concerns making special tools for servicing Dodge Brothers cars.

MOTOR AGE'S FLAT RATE FORUM

No. 43

FLAT RATES FOR DODGE BROTHERS CLUTCH OPERATIONS CONT.

(Continued from Dec. 3 issue)

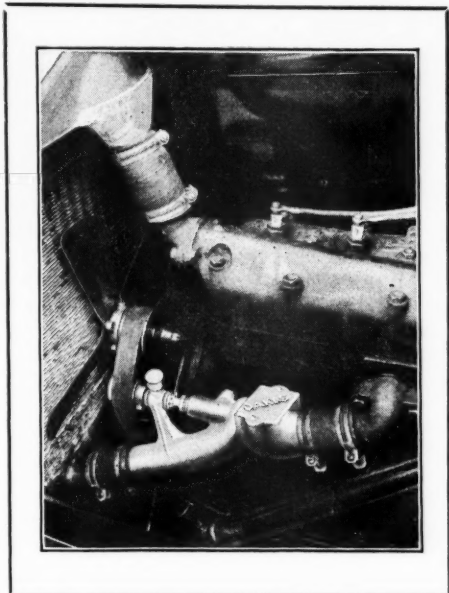
Manufacturer's Official Designation		Time
3119	Clutch driving disc pin (on flywheel), remove and install one.	14 hrs.
3119-A	In addition to Job No. 3119, to remove and install each additional flywheel pin, add.....	1/2 hr.
3120	Driven disc pin (on spider), remove and install one.	7 hrs.
3120-A	In addition to Job No. 3120, to remove and install each additional clutch spider pin, add.....	1/2 hr.
3117	Clutch pressure plate and hub, remove and install.....	7 hrs.
3106	Clutch driven spider and shaft, remove and install.....	7 1/2 hrs.
3108	Clutch pedal shaft, remove and install.....	2 1/2 hrs.
3107	Clutch release fork shaft, remove and install.....	4 hrs.
3109	Clutch shaft end play, remove.....	7 1/2 hrs.
3115	Clutch spring, remove and install.....	7 hrs.
3105	Clutch, wash with gasoline and treat with rosin and turpentine.....	1 1/2 hrs.
3110	Clutch release bearing grease tube assembly, remove and install.....	1 hr.

THE MARKET'S NEW OFFERINGS

Accessories—Equipment—Supplies

Oakes Water Pump for Fords

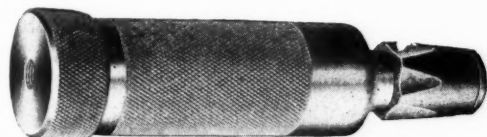
A CIRCULATING water pump for Ford cars and trucks which the makers recommend as being thoroughly efficient and dependable is being manufactured by the Oakes Company, Indianapolis, Ind. Installation is said to be easy as well as adjustment, no special tools being required for either operation. The regular Ford fan belt and hose connections are used. It is said that the pump operates at the proper speed at all times with consistently correct pressure while the heavy construction and ample internal clearance make it impossible for foreign matter or ice particles to clog or injure the pipe. List price, \$5.



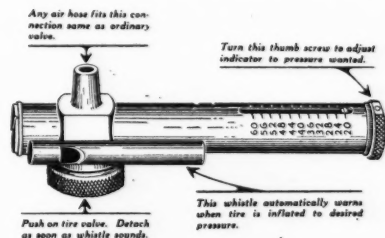
Oakes Circulating Water Pump for Ford Cars and Trucks

Dot Compressor Adapter

EVOLVEMENT of an adapter which converts any make of service compressor into a Dot compressor is announced by the Carr Fastener Company, 31 Ames Street, Cambridge, Mass., manufacturers of the Dot High Pressure Lubricator. An eight-inch pipe thread is tapped in the end of a standard Dot lubricator for inserting nipples of other makes of lubricating systems. The price complete to service stations is \$3.



Dot Compressor Adapter



Clymer Automatic Tire Gage

CLYMER Motor Products Company, Denver, Colo., is making a new type of tire gage the chief feature of which is that it registers the air pressure as the tire is undergoing inflation instead of after inflation has been accomplished. This instrument, known as the Clymer Automatic Air Gage, is carried either in the pocket or tool kit and when inflating a tire is attached between the tire valve and the air hose so that the air passes through the gage as it enters the tire. Another interesting feature is a signal whistle which warns the user when the desired pressure has been attained. Before inflating the pressure desired is set with a thumb screw indicator and when the proper pressure has been reached the air supply is shut off automatically—and the whistle is heard. This gage is packed in a small leather pouch, the outfit weighing 15 ounces. The instrument is five inches long and nicked and said by the manufacturers to be unfailingly accurate. Retail price, \$2.50.

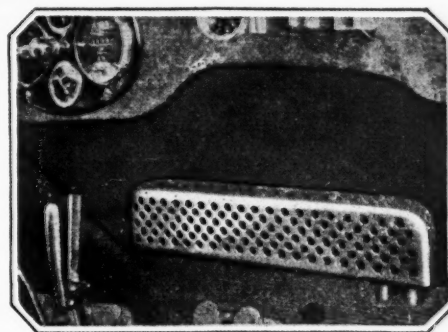
Piston Pin Retaining Springs

PISTON pin retaining springs for car and truck engines requiring such springs are now available in labeled, packaged lots from the G-H Tension Ring Co., Inc., Baltimore, Md. The retaining springs are packed in labeled boxes containing 100 springs and can be obtained either in packages or in a counter display carton containing an assortment of packages of each of the 27 different numbers.

Additional
Descriptions
Will Be Found
On Following
Page

Kingston Universal Car Heater

THE Kingston Universal Car Heater will fit and heat any car according to the Kokomo Electric Company, Kokomo, Indiana. It also is pointed out by the makers that the heater may be installed almost anywhere in the car. One of the popular installations is on the vertical dashboard where the heat first warms the feet of the passengers in the front compartment, then circulates throughout the vehicle. Just as handily however, it is said, the heater may be installed in front of either the front or rear seat or behind the front seat. The Kingston heater has an exceptionally large radiation surface, it is said to be gas-proof and also that the valve is positive in action and will not leak. The list price for this heater is \$8.50, including eight feet of flexible tubing.

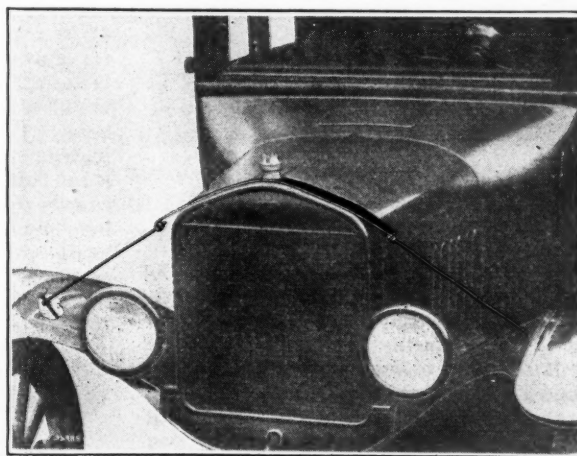


Kingston Universal Car Heater

Oakes Fender Brace for Fords

Cut Shown Below

ELIMINATION of fender rattle and vibration and effective fender protection can be realized through use of the Oakes Fender Brace for Ford cars and trucks, according to the Oakes Company, of Indianapolis, Ind., the manufacturers. Built of spring steel and finished in glossy baked enamel this brace is declared by the producers to be strong enough to withstand road shocks, very durable and neat. It is easily and quickly installed. List price, \$1.50.



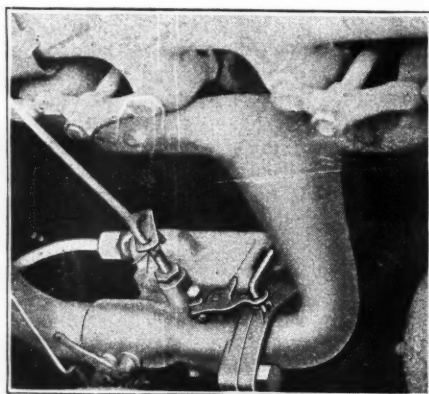
THE MARKET'S NEW OFFERINGS

Accessories -- Equipment -- Supplies

Continued from page 29

Model 229-A Ford Carbureter

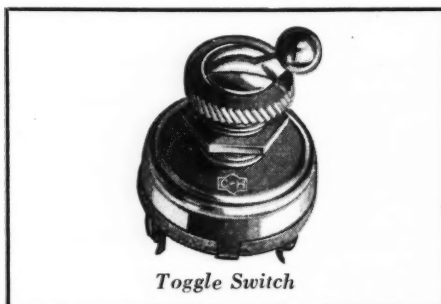
AMONG the new products of the Stewart-Warner Speedometer Corp., Chicago, is Model 229-A Carbureter for Fords. This is a replacement for the regular Ford carbureter unit and it is said to incorporate a number of highly valuable features which contribute to increased power, smooth running, easy starting, improved acceleration and diminished consumption. The carbureter is installed the same as the original unit. Acceleration from low speed is made powerful and positive through the aid of a fuel passage arrangement whereby the mixture is automatically enriched to a suitable amount to secure strong response on opening the throttle. While a single main adjusting screw controls the fuel flow at all times over the whole range of operation a supplementary adjustment screw permits of setting the idling mixture independently of the main needle. This permits the setting to be such as will give maximum power at all points, without getting the mixture too rich for idling. The only working parts in this model are those in the float mechanism which have been built into a unit with the float chamber cover to facilitate removal and inspection. The whole float chamber is readily dismantled without removing the carbureter. The fuel passage upon which the main adjusting needle seats is made of a size that prevents the operator from making the mixture much too rich even if he should open the needle several turns beyond the position giving the best all around performance.



Model 229-A Carbureter for Fords

Fits 1926 Fords

ANNOUNCEMENT has been made by the W. H. Thomas Mfg. Co., Spencer, Iowa, that the Improved Bull Dog Foot Accelerator fits the 1926 Ford models as well as all previous Ford models. The company says that the change in the brake pedal design on the new Ford models makes operation of the Bull Dog

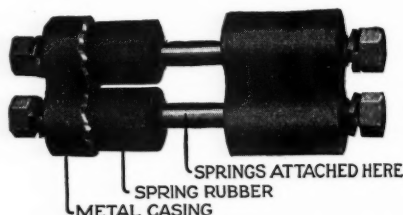


Toggle Switch

accelerator still easier and more comfortable.

Powell Rubber Shackles

THE Powell Rubber Bushing Co., Utica, N. Y., is manufacturing rubber shackles for Ford cars. These are so made that all weight of the car rests on bolts that go through 16 rubber bushings. The rocking of the springs is taken up by the twisting of the rubber. The manufacturers claim that they can be attached in 20 mins., and that the riding qualities of the car will be greatly improved. List price \$17.50 per set of four.



Powell Rubber Shackles

Rail-Type Heater

A NEW Rail-Type Heater, made by the Stewart-Warner Speedometer Corp., 1826-52 Diversey Boulevard, Chicago, is built in three models, designed for easy installation on all types and sizes of cars. Model 268-A is 26 in. long by 3 3/4 in. wide and is adapted to cars of large and medium size. Model 268-B is 22 by 3 3/4 and for smaller cars. Model 268-C is 22 in. by 3 3/4 and is designed especially for Fords, with a special valve for Ford installation. The entire heating unit is installed above the floor, utilizing all the heat. The heat is controlled from the instrument board, the control arrangement communicating with a valve which can be opened to any degree. The heating element is of drawn steel which heats quickly. The valve is gas tight and can not jar loose. Prices range from \$15 to \$18.



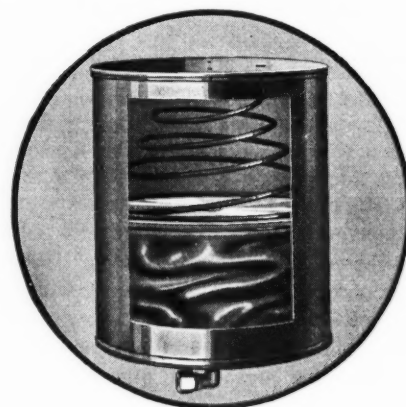
Rail Type Heater

Cutler-Hammer Toggle Switch

MOUNTED on the dash the Cutler-Hammer Toggle Switch controls such circuits as the spotlight, parking lights, courtesy lights, dome lights, running board lights, electric windshield cleaners, etc. The product is made by the Cutler-Hammer Mfg. Co., Milwaukee, Wis. The toggle lever actuates a large fan-shaped make-and-break wiping contact giving smooth, quiet operation. Ease of operation, a one-hole dash mounting, a large fan-shaped wiping contact, sturdiness and widely spaced terminals are the distinctive features claimed for the device by the producers. The entire mechanism is enclosed in a dust-proof cover, and the metal parts are attractively finished in nickel. Made in two sizes of stem, 1/8 in. and 1/4 in.

Alemite Radiator Condenser

IN the Alemite Radiator Condenser, a product of the Bassick Manufacturing Company, 2650 North Crawford Avenue, Chicago, is found a salvaging device which is said to hold to a minimum the expense of supplying alcohol solutions in winter and to be effective in conserving the water supply in both winter and summer. The condenser is attached to the overflow pipe of the radiator catching, condensing and thereby "saving" fluid and fumes that otherwise would be lost by evaporation from the circulating system. After condensation the solution is returned to the radiator by the pressure of a coil spring which tends to



Alemite Radiator Condenser

empty the container. With this appliance in use the makers say one filling of alcohol solution will last all winter for efficient service. The Alemite Radiator Condenser is 8 3/4 in. high by 6 1/2 in. wide and may be installed on the frame of the car or on the cowl dash under the hood. The retail price east of the 100th degree meridian is \$6.50 and \$6.75 west.

EDITORIAL

Tax Cut in Sight

THE industry seems to be pretty well agreed upon what it expects to get from Congress in the way of tax reduction. The bill as reported by the Ways and Means Committee of the House provides for reduction of the tax on passenger cars from five per cent to three per cent of wholesale price. On the basis of experience the first half of this year that means an average saving of \$11.60 on every passenger car sold. Of course in practice it will be more on some cars and less on others, depending upon the price. But the important thing is that it is a substantial reduction and it is equivalent to a price reduction.

The industry was inclined at first to carry its fight for complete elimination of the tax to the floor of Congress, but a careful survey of the situation showed this probably would be unavailing. The industry, therefore, has agreed to accept what is offered it and in return the Ways and Means Committee has provided a way for dealers to be reimbursed for the difference between the old rate and the lower rate on all cars bought by them before the reduction becomes effective but still on hand at that time.

Although the passenger car must continue to bear a tax burden, all other branches of the industry are to be given complete relief. Tires and accessories will be tax free so far as the Federal Government is concerned and industry will be given an impetus that ought to swell income tax receipts.

A Christmas "package" holding an automotive gift will be much more fitting this year than one of the wobbly kind from the Old Crow reservation.

At Worst—A Bad "Spot"

FARM prosperity, which is regarded by economists as an important element of general industrial prosperity, seems to be involved somewhat in arguments as to the effect of a slump in the corn market. The situation is not serious enough to warrant any national uneasiness although it stands to reason that if a great proportion of the farmers of Iowa and other states are to check out losses on their 1925 corn a regional lowering of farm buying power will result.

Just where the Iowa farmer stands financially on a comparative basis is a point on which authorities do not agree. On the one hand we hear it said continuance of the present low price level will put the Iowa corn farmer considerably in the hole, while again it is advanced that

this largest corn crop in the history of the state will produce an income 10 per cent greater than that realized last year. If that 10 per cent means "net" the situation manifestly is not so bad as it has been reported but if it means that the gross income is 10 per cent greater—more or less of the excess must be charged to the cost of the larger operations.

It is difficult to say, therefore, what the comparative status of the corn farmer is. We can only hope that he will be able to find his way out with a compensating return.

Automotive interests of the Mid-West are watching the situation but they are not worrying. Leading bank reviews of business conditions see nothing in the Iowa situation to cause disquietude or stop the march of general national prosperity. Mail order houses established records in November and expect December to set new marks—which would seem to indicate that the nation's rural dwellers, on the whole, have surplus money. At worst it would appear that the Iowa corn situation is simply a bad "spot" in a picture which generally is good and inspiring.

Sullen service never brought a customer back—unless to kick.

Association Merger Rejected

BEHIND the action of the Motor and Accessory Manufacturers' Association in rejecting the proposed merger with the Automotive Equipment Association appears to be the desire of the members of the first named association to continue its identity as a group composed exclusively of manufacturers. The Automotive Equipment Association has both manufacturers and wholesalers as members and has been unusually successful in bringing about cooperation of these two branches of the industry which are naturally somewhat inclined to view each other with a certain amount of antagonism. Making them realize their mutual dependence in the struggle for business advancement has been the great work of the A. E. A. On the other hand the M. & A. M. A. has performed a valuable service for the industry in promoting the efficiency and standing of a large manufacturing group. It is to be expected that both associations will continue as strong and influential groups in the respective fields.

When an automotive merchant sees a new competitive product in service he can mumble huskily to himself: "Someone else—has asked 'em to buy."

Factories Reduce Output for Inventory

Sales Continue on Good Basis for Time of Year

Dealers Stocking New Cars Steadily Following Assurance of Rebate on Taxes

NEW YORK, Dec. 9.—With many factories shutting down this month for the annual inventory and for various changes in machinery and plant layout it is likely that the production total of cars and trucks will be the lowest since early in the year, and well below the total of 379,300 units which was turned out in November, marking a new record for that month. Sales continue on a satisfactory basis, taking the country as a whole and considering the season of the year.

Dealers are stocking steadily with new cars. Their fears that they would have to absorb the difference between the old tax rate and the new one that is expected to be effective in March or April of 1926 have been dispelled by the action of the House Ways and Means Committee in deciding to make the reduction cover cars in stock when the new schedule goes into effect.

The production total for the year to date, 3,997,954 cars and trucks, exceeds the record total of 11 months in 1923 by 5.6 per cent. It is thus likely that even with curtailed output this month the total for the whole year will be from 20,000 to 50,000 higher than the previous record-breaking year.

Looking a little ahead, the favorable indications for the new year are the low prices and attractive quality of the cars now in production and the signs of industrial advance that apparently augur well for general prosperity. On the other side of the ledger are over-supplied used car market; a gain in repossessions of cars sold on time—which may, however, be merely seasonal; the possibility that too large stocks of new cars may be built up before the spring selling season begins, and the possibility that the price cuts and liberal selling terms of 1925 may have anticipated the normal 1926 market.

EXPORT SCHOOL HELD

WASHINGTON, Nov. 21.—A preliminary study of export and import conditions in foreign countries and the methods of the U. S. government in assisting the automotive industry in its acquisition of foreign automotive trade, was the subject of a two weeks course just completed by nine representatives of the Dodge Brothers Motor Company, who will leave the United States next week for foreign offices. Those here and their foreign territories were: H. G. Rohns and W. W. Stillson who will go to Calcutta; S. V. Schrapacasse, to Johan-

nesburg; G. E. Blomquist, to Buenos Aires; William Childs, to Panama City; G. H. Krogh and R. Cook to Hamburg; T. Holst to Paris, and F. J. Yhuse to Shanghai.

NEW AUBURN DEALERS

AUBURN, Ind., Dec. 5.—Below are listed new dealers who have recently been added to the Auburn organization:

Service Garage, St. Augustine, Fla.; John Tobin, Augusta, Ga.; J. C. Kimmell & Son, Ligonier, Ind.; Long's Garage, Lorain, O.; Pershing Garage, Danbury, Conn.; E. Hope & Son, Tamaqua, Pa.; Auburn-Bridgeton Co., Bridgetown, N. J.; C. M. C. Motor Co., Franklin, Pa.; Watt Smith, Muncie, Ind.

NEW JEWETT PRICES

DETROIT, Dec. 5.—Following the introduction of the New-Day-Jewett car described in detail through these columns last week, the Paige Detroit Motor Car Co., announces the prices of the de-luxe touring model and the chassis. The open car lists at \$1,095, the same as the de-luxe sedan while the chassis is priced at \$825.

Rollin Motors Plans to Discontinue Making Cars

CLEVELAND, Dec. 7.—Rollin Motors Company, Cleveland manufacturer of Rollin cars, has discontinued production and plans for winding up the affairs of the company are being developed. This admission was made by Gardner Abbott, secretary and attorney for the company.

"Production has been discontinued simply because we are unable to sell cars," Abbott explained. "Plans for liquidating the business have not been developed as yet and I do not know what will be done. We have a good car and we have a good engineering staff. Beyond that I do not care to discuss the question at this time."

James G. Heaslet, president, said today he had forwarded his resignation to the company six weeks ago and that he had not been near the local plant since that time. It was said at the company's offices that Mr. Heaslet was still president. Mr. Heaslet is expected to tie up with an important manufacturer within the next week, but he said today he did not care to discuss his plans.

WARFIELD LEAVES GILL

CHICAGO, Dec. 5.—E. E. Warfield has resigned as vice-president in charge of sales of the Gill Manufacturing Co. His plans have not been announced. George A. Cramer, advertising and assistant sales manager of this concern, also has resigned.

M. & A. M. A. Directors Vote to Reject A. E. A. Merger Plan

Manufacturers Believe Membership and Industry Will Best Profit By Continuance

NEW YORK, Dec. 7.—Rejection of the proposed merger of the M. & A. M. A. with the Automotive Equipment Association, was voted by the board of directors of the former association at the meeting here Friday.

The board accepted the resignation as president and director of the Motor and Accessory Manufacturers' Association, of E. P. Chalfant, vice-president of the Gill Manufacturing Co., who has accepted the executive vice-presidency of the National Standard Parts Association. Mr. Chalfant has been an M. & A. M. A. director for two years and was elected president last January.

The board also accepted the resignation as director of E. V. Hennecke, vice-president of the Moto-Meter Co., who was elected in November a director and vice-president of the Automotive Equipment Association. These vacancies probably will be filled at the annual meeting in January.

The statement of disapproval of the proposed merger, as sent to the members of the M. & A. M. A., was as follows:

"When the merger of this association with the Automotive Equipment Association was first suggested, the idea met with a certain amount of favor. On the surface it seemed to be a progressive move for both associations. Several months have now been given to intensive study and investigation of the subject, and your board of directors, after thorough consideration of all the advantages and disadvantages of such a merger, has concluded that the interests of our membership and of the industry, would be served best by continuance of this association as constituted at present, that is, as an organization of manufacturers.

"The board, therefore, at its meeting held in New York December 4, unanimously voted to disapprove the proposal to consolidate or merge this association with the Automotive Equipment Association."

PIERCE ADDS EQUIPMENT

BUFFALO, N. Y., Nov. 28.—An especially designed Winterfront is now being issued as standard equipment with both the series 33 and the series 80 Pierce-Arrows. Houdaille shock absorbers are also being issued at present as standard equipment on the series 80. Some recent improvements have also been made in the gasoline system and in the appearance of the gas tank on the series 80.

Compromise Is Reached on Automotive War Tax Relief

Bill Before Congress Provides Way to Rebate Dealers for Loss on Unsold Cars

NEW YORK, Dec. 8. — Automobile manufacturers will seek no further reduction in the tax on passenger cars than that provided for in the bill already prepared by the House Ways and Means Committee and now before Congress. While maintaining the principle that automobiles as necessities rather than luxuries should not be submitted to federal tax, they have decided to discontinue their efforts to remove the remaining 3 per cent tax on passenger cars in return for certain concessions from the committee, regarded by the manufacturers and dealers as essential to the continuance of good business conditions in the industry.

The committee has inserted in the bill a provision under which the 2 per cent reduction on passenger cars will not become effective until 30 days after the passage of the act. The committee has also provided a rebate of the tax on all cars in the hands of dealers at the expiration of the 30 days.

There had been every indication that the 2 per cent reduction would induce prospective buyers to hold off until the entire tax had been removed. For this reason dealers feared a business slump, and they also raised the question as to whether they or the manufacturers, the latter having pledged themselves to pass the reduction along to the consumer, would bear the loss involved on cars already taxed but still on dealers' floors when the reduction became effective.

Present indications are that the law will be passed by March 15. This would mean that the relief on the passenger cars would not begin until April 15. Under the agreement dealers and agents would then be permitted to apply for a refund of the tax they had paid on passenger cars, on hand, on April 15.

The date of the relief on truck and accessories' taxes was not altered and will be taken off on the date that the bill becomes effective.

The manufacturers participating in the discussion included H. H. Rice, president of Cadillac and chairman of the legislative committee of the N. A. C. C.; F. J. Haynes, president of Dodge Brothers; A. T. Waterfall, vice-president of Dodge Brothers; H. H. Bassett, president of Buick; Lawrence P. Fisher, of the Cadillac company; S. E. Ackerman, sales manager, Franklin Motors; Alvan Macauley, president, Packard; B. E. Hutchinson, treasurer, Chrysler, and J. L. Pratt, vice-president of General Motors.

A CORRECTION

In connection with the description of the New-Day-Jewett in the December 3 issue of MOTOR AGE the tire diameter as stated on page 18 was given as 27 in. This should have been 29 in.

BUICK STARTS EXPANSION

FLINT, Mich., Dec. 5.—Marking the first step in its \$2,000,000 expansion program, the Buick Motor Company has started construction of an addition to its engine plant to make possible the production of 1,200 engines per day. The engine production is calculated to take care of the recently announced daily production of 1,200 Buick passenger cars. This output is expected to be reached by next summer.

GRAHAM PLANS NEW TRUCK

NEW YORK, Dec. 5.—A 3½ ton bus and a truck of the same capacity, powered with large size Dodge Brothers engines, will be brought out by Graham Brothers about January 1, according to Robert C. Graham, director of the commercial car and truck division of Dodge Brothers and vice-president of Graham Brothers.

Hudson Is Launching Big Sales Drive in Carolina

CHARLOTTE, N. C., Dec. 5.—Approximately 500 automobile distributors, dealers, salesmen and officials of a number of banks in North Carolina were expected to attend a conference here December 9, when officials of the Hudson Motor Car Company, of Detroit, Mich., will launch an intensive sales campaign, according to an announcement by B. D. Heath, president of B. D. Heath Motor Co., Hudson distributor, of Charlotte. Harry G. Moock, sales promotion manager of the Hudson Motor Car Co., and R. S. Somerville, assistant service manager of the company, are on the program to deliver addresses at a banquet.

The six Hudson-Essex dealers in this state are W. H. Wray, of Gastonia; W.-S. Motors, Inc., of Winston-Salem; Hudson-Essex Sales Co., of Wilmington; Weaver Motor Co., of Asheville; Motor Sales Co., of Wilson, and Heath, of Charlotte.

The bankers were invited to the conference to participate in discussions relative to the financing of motor car purchases. Mr. Heath is carrying large advertisements in the newspapers of this city, in which he is emphasizing that a Hudson coach may be bought for \$295 down and the Essex coach for \$195 down. This policy is indicative of the vigorous efforts being made by several of the more important distributors here to move their cars into owners' hands through the deferred payment plan's operation. In consequence, the automobile financing companies' branches here are reporting an unprecedented and increasing volume of this class of business.

ROBERTS JOINS MILLER

AKRON, Dec. 5.—Arthur O. Roberts has been recently placed in charge of the dealer service division of the advertising department of the Miller Rubber Company. The new dealer service man brings to his new position a wide knowledge of advertising and especially of the problems faced by dealers. This knowledge he gained through close contact with many phases of advertising in various fields.

N. A. C. C. Frowns Upon Hotel Room Exhibits During Show

Directors' Resolution Says Such Displays Are Designed to Distract Needed Attention

NEW YORK, Dec. 7.—Directors of the N. A. C. C. have adopted resolution denouncing the practice of making exhibits of parts and accessories at hotel rooms during the national automobile shows in New York and Chicago as antagonistic and a menace to the shows.

These exhibits in hotel rooms, say the directors, "are designed to take advantage of the shows without contributing anything to their well-being and therefore unworthy members of the industry."

"They are an attempt to transact, at other places, business for which, in part, the shows are promoted."

"They are an attempt to distract the attention of factory representatives whose business requires their attendance regularly at the shows."

"They will, if continued, have a serious effect on the display of parts and accessories and are, therefore, a menace to the success of events which have for 25 years played an important part in the upbuilding of the industry."

"They are disloyal to the car manufacturer who properly expects his efforts in connection with the shows to be supported by a display of the component parts of his car."

"The directors believe, further, that the cultivation of more intimate acquaintance between members of the industry is essential to the continued success of the national shows."

OVERLAND VOTES DIVIDEND

TOLEDO, Ohio, Dec. 5.—Liquidation of an obligation of \$6,559,726 in accumulated dividends on the preferred stock of Willys-Overland Co., through issuance of common shares on a basis of \$25 a share, was approved by directors at the meeting here. The back dividends of 29½ per cent have been piling up since October, 1920. In addition the regular quarterly cash dividend of \$1.75 is made payable to the preferred stockholders on January 2 to those of record December 20. Certificates of rights which will be negotiable will be issued for the common stock distribution at the same time. No action was taken on any dividend for the common shareholders.

FRENCH PRICES RAISE

PARIS, Nov. 21.—(by mail)—By reason of the depreciation of currency, automobile prices are on the upgrade on the French market. The Talbot Company has increased all prices 10 per cent; Unic has added 2,000 francs to the price of all chassis; Citroen has increased the price of his 5 h.p. model 1,500 francs, the larger model remaining unchanged. Up to the present Renault has made no change, but an increase is expected.

Sectional Meetings of S. A. E. Are Announced for December

Many Subjects of Importance to Industry Will Be Discussed in Various Cities

NEW YORK, Dec. 5.—The Society of Automotive Engineers has just issued a list of its December sectional meetings, together with the subjects to be discussed.

The Pennsylvania section will meet at Reading, Pa., on Dec. 8, will make an inspection trip through the plant of the Carpenter Steel Co., and will listen to a paper on "Automobile Steels," by Dr. B. H. DeLong. The Indiana Section will gather at the Hotel Severin, Indianapolis, Dec. 10 and hear a talk on "High Duty Engines," by F. S. Duesenberg. The City Club at Los Angeles will be the scene of the Southern California meeting on Dec. 11, and, following a dinner addresses will be delivered by R. E. Haylett and J. B. Terry on "Manufacture and Utilization of Gasoline". The Washington Section will meet at the Cosmos Club, also on Dec. 11. On this occasion a paper on "Steam Cooling" will be read by A. G. Herreshoff.

"Gas-Electric Drive" is the topic to be taken up at the Cleveland meeting on Dec. 14 and the speakers will be J. C. Thirlwall and E. M. Fraser. The Buffalo section, on Dec. 15, will listen to Ernest Murphy, who will have as his subject "Transportation Service". At the Engineers' Club, Dayton, O., O. T. Kreusser will speak Dec. 16 on "Organization and Operation of General Motors Proving Ground". December 17 the Detroit Section will gather in the General Motors Building to hear a discussion of "Cylinder Lapping" by factory representatives of Ford, Dodge, Packard, Hupp, Paige, Chrysler and White companies.

The Chicago meeting will take place Dec. 18 at the Engineers' Club when F. S. Duesenberg will speak on "High Efficiency Engines". The final meeting of the month will be that of the Northern California Section on Dec. 29 at the Engineers' Club, San Francisco, when Harold Jarvis is to address the meeting on "Problems of Fleet Operation".

FIAT TAKES 6-DAY MARK

PARIS — (by mail) — Averaging 48 3/4 miles an hour for 144 consecutive hours, a standard 10 h.p. Fiat captured the world's six-day record on Monza track, yesterday evening. The Fiat, which had a four-cylinder engine of 14550 cc. (88.4 cubic inches) was fitted with the Silvani head, with pushrod-operated overhead valves, and was handled by the four drivers Silvani, Botta and Mangiarotti, and Belgir. After breaking all world's records from 1,500 to 7,000 miles, thus capturing 38 world's records and 48 international records for the 1,500 cc. class, the Fiat continued after the 144th hour and came to a stop with a total distance of 7,145 miles to its credit.

DEALER HOLDS CONTEST

PORTLAND, Ore., Dec. 5.—"Eight Hundred or Bust" is the slogan of a sales contest inaugurated by employees of Braley & Graham, Dodge Brothers dealers. The purpose of the contest is to show a total of 800 retail deliveries in Portland of Dodge Brothers cars for the calendar year. The sales force has been divided into two teams of nine each.

PAIGE DEALERS MEET

WASHINGTON, Dec. 5.—Paige and Jewett dealers from the District, Maryland, Virginia and West Virginia, 100 in all, together with Paige-Detroit factory officials and members of the staff of the local distributor organization were guests of Washington-Virginia Motors this week at a luncheon and banquet held at the Mayflower Hotel. T. T. Mott, president of the Washington-Virginia Motors, introduced the speakers; C. P. Gaunt, sales manager for the Paige-Detroit Company; Robert Seymour, vice-president of the Commercial Investment Trust Company of New York, and H. H. Hill, district advertising representative for the Paige-Detroit Company.

Indianapolis Dealers See Excellent 1926 Business

INDIANAPOLIS, Dec. 5.—With November new car selling certain to be from 15 to 20 per cent better than the same month last year, and with October corrected figures showing a gain of 25 per cent over the October, 1924, records, and with every promise that December will show a very substantial gain over this past month Hoosier automotive sales circles are looking forward to the new year with considerable cheer.

December is always a good month in this state as compared to November. The new registration year begins December 10 and many sales of November are carried over for December registration. This gives an otherwise dull season a friendly boost and helps dealers and salesmen.

The last month, and in fact the entire last quarter so far has witnessed a large gain in accessory selling over last year's record. The biggest jobber here is elated over the biggest month's business in the long history of the organization.

ACCESSORIES MOVE WELL

CHARLOTTE, N. C., Dec. 5.—Accessories dealers of the Carolinas are reporting a steady demand as the holiday season approaches, and the slight softening of the market, developing late in October, proved only temporary, according to leading jobbers here. The demand is well spread out over the jobbers' lines, and it is hardly accurate to say that any class of products is a leader at this time, it was explained. The demand for garage supplies and equipment, as well as other heavy items of the trade, is brisk. That was accepted as an indication that the automobile repairing industry is expanding in keeping with the unusually heavy demand for new automobiles. All orders are being filled promptly.

Ford's New Steel Rolling Mill Running in Detroit

Plant Adds Almost Final Link in Policy to Make Everything Needed in Cars

DETROIT, Dec. 5.—Henry Ford has entered the ranks of the steel magnates. At the River Rouge plant of the company, rolling steel has begun in the new steel mill, adding almost the final link in the company's policies to manufacture every article that goes into the manufacture of its cars.

The new mill is housed in a building more than a quarter of a mile in length and 460 feet in width. It is one of the largest structures of the River Rouge plant. It will produce bars of various sizes, all of steel made according to Ford specifications and intended for the manufacture of the various parts to be used in assembling Ford cars.

The rolling mill, which has a capacity of handling between 15,000 and 20,000 tons of steel in a month, is the first unit of the steel plant to start operation. Not until March or April of next year will the plant function as a whole.

Electricity from the Ford lines has been harnessed to provide power for all the jobs which formerly demanded manual labor. Even the furnace, once stoked by man, is now fed by a turn of a valve. Throughout, the process seems comparatively simple and, aided by electricity, the work is done in such a manner as to cause the steel men of former days to wonder.

TRUCK OUTPUT GAINS

FORTWAYNE, Ind., Dec. 5.—The International Truck Company's plant here is now producing an average of 25 motor trucks daily, an increase of previous production records. Contemplated additions to the staff at the plant, which was opened about 18 months ago, will bring the December production above the 30-truck-daily mark, according to officials. Indications are that orders on hand will necessitate a production schedule of not less than 50 trucks daily during January.

NEW DURANT OFFICE

ATLANTA, Dec. 5.—Star and Durant dealers in the central Tennessee and central Kentucky territory will henceforth obtain their equipment through a new wholesale office opened by Durant Motors, Inc., at 1312 Starks Bldg., Louisville, Ky., it has been announced by the southern branch of the company in Atlanta.

HEADS AIR EXPRESS

LOS ANGELES, Dec. 5.—Harris M. Hanahue, until recently manager of the Apperson Automobile Company's branch in Los Angeles, has accepted the post of general manager of the Western Air Express, Inc., which has been organized largely by automotive men to promote commercial aviation.

New Car Sales Show Big Increase in San Francisco

Gain of 40 Per Cent Over November Last Year Reported by Northern California Dealers

SAN FRANCISCO, Dec. 5.—Sales for November in central northern California show an increase of about 40 per cent over November of last year and 20 per cent over October, 1925, which in turn showed an increase of about 30 per cent over October last year.

Used car sales are holding up well with rebuilt cars taking the lead and dealers in new cars doing the greater part of the used car business. Dealers in used cars only are having rough going and a number have been forced out of business.

Truck sales show an increase of about 20 per cent over November of last year due largely to late rains and the marketing of almost the entire fruit crop without loss. The state as a whole is very prosperous and sales of cars priced above \$2,000 here show a gain proportionate to that of cars sold at \$1,500 or under for the first time in five years.

Delay in distribution of the new model Fords turned many unexpected sales to other companies. Dealers all say that many prospects bought cars for Thanksgiving instead of waiting for Christmas and that as many cars were sold for Thanksgiving delivery this year as were sold for Christmas last year.

Indications are that December in northern and central California will be as good as or better than November.

Velie Holds Session of District Representatives

MOLINE, Ill., Dec. 5.—A two-day conference of district sales representatives of the Velie Motors Corporation opened here last Monday. Sales services and advertising plans for the coming year were discussed under direction of C. W. Hadden, general sales manager.

C. M. Gustine, service manager and H. C. Snow, chief engineer, addressed the gathering along their respective lines. On Tuesday advertising plans were discussed by A. M. Taylor, advertising manager, and LeRoy T. Goble, representing Critchfield & Company, advertising agents for the Velie also spoke on this phase of the business.

District representatives who attended were: G. C. Morgan, Chicago; R. A. Spillane, New York; G. E. Anderson, San Francisco; Al Kinnear, Omaha; C. F. W. Poggenburg, Philadelphia; Willard L. Velie, Moline and J. C. Muir, Pittsburgh.

FORD PLANT SPEEDS UP

CLEVELAND, O., Dec. 5.—Between 175 and 225 Ford automobiles are being assembled here daily in the Ford Motor Company assembly plant, A. B. Pease, general manager has announced.

Heads New Oakland Department



W. L. Buck, manager of Oakland's new used car department

Chevrolet Sees 1925 Gain Of 60,000 in Production

DETROIT, Dec. 5.—By the end of December, Chevrolet Motor Co. will have manufactured upwards of 500,000 passenger cars and trucks. This number will exceed previous Chevrolet production by approximately 60,000 cars.

According to W. S. Kanudsen, the company's total production to date for 1925 is greater than its combined production during the entire first eight years of its existence. Much of the 1925 output is attributed to the series of record breaking months during which production consistently remained around the 50,000 mark each month.

The outlook for 1926 is said to forecast an even better business than that done during the present year.

GUAYULE PLANT RUNNING

MARATHON, Tex., Dec. 5.—Crude rubber at the rate of one ton a day is being extracted from wild guayule shrubs at the plant of the Border Rubber Company at Marathon. This company is subsidiary of the Thomas T. Wilson Company, Inc., of New York. Its plant here was constructed in 1905 and was operated almost continuously for about nine years. The growth of wild guayule shrubs in this part of the upper Rio Grande border region was exhausted and it was not until last July that operation of the industry was renewed. In the meanwhile a new and very prolific growth of the rubber-producing shrub had sprung up and there is enough of the raw material to keep the factory running for several years, it is stated.

Entry Blanks Mailed for Big Memorial Day Classic

Cars This Year Will Have Half Piston Displacement of Ford Engine—Builders Busy

INDIANAPOLIS, Dec. 5.—Racing cars half the displacement of a Ford engine, with a speed of upward of 120 miles an hour is the prediction of racing car builders of Europe and America, who are busily engaged in making the vest-pocket motors for the 1926 Indianapolis race.

The preliminary starting bomb of the Fourteenth Annual International Sweepstakes was fired today, when entry blanks were sent to every driver of prominence in America and Europe. The race will be held next year on Monday, May 31.

The outstanding feature of the announcement is that the piston displacement of the competing cars has been reduced from 122 cubic inches, where it was placed for 1923, 1924 and 1925 International Sweepstakes, to 91½ cubic inches.

There will be no change in the distance, which is 500 miles; there will be no change in the prize money which is the largest amount ever offered by any racing organization. The one-day change in time is due to Memorial Day coming on Sunday in 1926 and the Indianapolis Motor Speedway clings rigidly to its rule of scheduling the race for the next day.

H. W. Booth Joins Ajax as Assistant Sales Manager

RACINE, Wis., Dec. 5.—Announcement is made by George C. Hubbs, general sales manager of Ajax Motors Company, of the appointment of Harold W. Booth as assistant sales manager and of W. H. Shadburne as factory representative. Mr. Booth comes to Ajax Motors from the Willys-Overland Company, having been in charge of retail sales of Overland and Willys-Knight cars in St. Louis for some months past. Prior to that, Mr. Booth for a number of years was associated with Mr. Hubbs at the factory of the Dodge Brothers in Detroit. Mr. Shadburne comes to Ajax Motors from Studebaker, having been in charge of retail sales for the Studebaker Chicago distributor for some time past. He is well known in motor car circles and an authority on retail sales.

"COURTESY SERVICE" OPENED

BOSTON, Dec. 5.—The Courtesy Service Corporation has been incorporated at Springfield, Mass., and it has taken over the business conducted under the name of Those Motor Twins. The Courtesy Service Corporation operates service and rental stations in Boston and Cambridge and it sells its customers yearly maintenance contracts. C. S. McDonald is general manager, and Stephen E. Couch, for years with the Western Massachusetts Cadillac Company, is manager of the service department.

Los Angeles New Car Sales Reported on Average Level

Time Payment War Ends in Agreement to Reduce Period to 18 Months

LOS ANGELES, Dec. 5.—New car sales throughout Southern California were maintained at a satisfactory level during November, with an increase over the same month last year. As compared with October, however, November sales showed a decrease, in accordance with the usual seasonal influences. There has been an appreciable increase in used car stocks during the last two months, and a large number of dealers are admittedly overloaded. Most of these dealers have slashed their prices to the bone, taking heavy losses in order to move them. Even at ridiculously low down payments and attractive prices buyers for used cars are hard to find.

Of outstanding importance in the Southern California market is the return by virtually all dealers to a maximum 18-month time payment plan after a veritable "finance war" between various leading distributors, which was climaxed when one distributor offered 27 months. It is known that several factories "requested" their Los Angeles distributors, who had extended their payment periods to meet competition, to immediately return to a maximum 18-month basis.

Officers of the leading finance companies in Los Angeles, realizing that unless they shortened the payment periods serious business reverses would occur in Southern California automobile merchandising, because the used car was losing its market, called a meeting and agreed to make 18 months the limit. One Los Angeles distributor, who is credited with having started the "time payment" war still features the same low down payment, however, but necessarily has increased the amount of monthly payments owing to the contraction of the payment period.

It is generally agreed by Los Angeles distributors that competition this year in Southern California is the keenest on record, and that if the "time payment" war had continued there undoubtedly would have been serious business consequences. Now that the situation has been relieved, the outlook for the remainder of the winter in this territory is considered very favorable.

CADILLAC DEALERS MEET

DALLAS, Tex., Dec. 5.—Cadillac dealers from all parts of the Dallas territory were here this week to hear G. E. Mapes, sales expert from the factory, outline the company's sales system, recently adopted after tests extending over a period of two years. While here the visiting dealers were entertained by the Munger Automobile company, Cadillac distributors. The dealers were here from Fort Worth, Lubbock, Vernon, Wichita Falls, Waco, Waxahachie, Brownwood, Breckinridge, Gainesville and Paris.

He Holds Distance Record

NEW YORK, Dec. 5.—F. S. Mann of Adelaide, Australia, is travelling 11,500 miles to participate in the second Motor Transport Congress to be held here Jan. 11-13 at the time of the automobile show. Mr. Mann represents the Motor Traders of South Australia. At the beginning of 1925 it was estimated that there were 28,300 motor cars and 3,000 commercial vehicles in South Australia.

F. P. McCough Is High Man For U. S. in Velie Contest

MOLINE, Ill., Dec. 5.—In a delivery contest staged by the Velie Motors Corporation during the month of October, the following sales men were awarded prizes:

High man for the United States, F. P. McCough of the Velie Bell Co., Chicago.

High man, Minneapolis district, J. S. Malchow of the R. C. Smith Automobile Co., Minneapolis.

High man, Philadelphia district, Melvin Yearly of Triple Towns Garage, Riverside, N. J.

High man, Pittsburgh district, D. A. Heindel, Youngstown, O.

High man, Moline district, Harry Alpaugh of Dean Motor Company, Inc., Moline.

In the New York district, F. J. Cunningham of the New England Velie Co., Boston, and P. V. Becker of Schenectady, tied for first place. In the San Francisco district, Philip Gerst and J. C. Kail, both of the Edward Roesch Co., Seattle, Wash., tied for first place. In the St. Louis district, Frank T. Dugan of Curran Motor Co., Kansas City, and H. D. Kennedy of John Peter Heiser, Inc., Denver, Colo., tied for first place. Under the rules of the contest, prize money in case of tie was divided.

NEW DIANA COLOR SCHEME

ST LOUIS, Dec. 5.—An innovation in Duco color combinations was introduced by the Diana Motors Co., recently when a number of special Diana roadsters finished in black and white Duco, were placed on display by several of the larger Moon-Diana distributors, as an experiment in special body finishes. The black and white roadsters were intended mainly for show purposes but have been so quickly absorbed that a second lot, considerably larger than the first is being brought through the Diana plant for immediate delivery.

LACQUER PLANT ENLARGED

BUFFALO, N. Y., Dec. 5.—Pratt & Lambert, Inc., 75-year-old varnish making firm has begun the construction of a new unit to the vitraloid plant, which will double the plant capacity. It will cost not less than \$50,000.

Cincinnati Buys Used Cars As Investment for Spring

In Many Instances Same Man Purchases Three or Four and Stores Them for Strong 1926 Market

CINCINNATI, O., Dec. 5.—Briskness of the used car market in the Cincinnati district is occasioning considerable comment. Used car sales in October and November constituted the largest factor in the auto trade, according to the statement of dealers, and this month is taking precedence over new cars sold by a substantial margin.

Explanation given by dealers is that the fans are picking up bargains in used cars wherever they can find them. In several instances buyers have taken on three or four used cars and have had them delivered direct to their garages for storage. No effort has been made to obtain license tags for them or to operate them. They are apparently being held as an investment.

This situation is apparently general for used car dealers say they are selling everything they had to offer in cars of all standard makes from 1923 and up. They say that the demand is the most brisk they have ever experienced. Several dealers took the trouble to inquire from purchasers why they were buying two and three and even four used cars at this time. It is said the buyers replied that used car prices would not be so cheap next year and they expected to turn their purchases at a nice profit next spring or summer.

Dallas Dealer Gives Free Gas With Used Cars Sold

DALLAS, Tex., Dec. 5.—The Worsham-Buick Company of Dallas has inaugurated a new sales idea in connection with its used cars. With every used car sold the company gave 100 gallons of gasoline. The company told the public of the new proposition through considerable display and want ad space in local daily papers.

The company did not pad the prices on used cars during the "free gas sale." All prices were marked in plain figures and the 100 gallons of gasoline went to the purchaser no matter whether he brought a reconditioned Ford coupe at \$300 or a Cadillac at \$2,500.

One hundred gallons of gasoline at retail prices prevailing in Dallas meant a saving of \$20 to the buyer of a used car. Many buyers took advantage of the "100 gallons free gas sale" the company officials said.

WHITE VISITS COAST

LOS ANGELES, Dec. 5.—Walter C. White, president of the White Company, Cleveland, recently made his first trip to Los Angeles and the Pacific Coast since 1913 for the express purpose of attending the formal opening of the new branch of The White Company established in Los Angeles.

Dodge Brothers Announces Refinements in B Sedan

Overall Height Reduced, Pillars Made Smaller, and One-Piece Windshield Added

DETROIT, Dec. 5.—A number of improvements have been incorporated in the Dodge Brothers type B, all-steel sedan which add materially to its appearance. The body is now finished in sage brush green lacquer with a fine red stripe and the top and running gear is black.

The overall height has been decreased about two inches and a reduction in the size of the pillars has resulted in increased visibility. A one piece windshield, hinged at the top, has replaced the former two-piece design and a cowl ventilator has been added. Rear quarter windows are operated by lever regulators instead of the crank type previously used.

Changes in the tilt of the seats make them more comfortable and the doors overlap the floor as a protection against draughts. The windows on this model are now interchangeable and the doors are hung with three hinges instead of two.

Shipments from the factory are stated to be at the rate of 400 daily.

CANADIAN TIRES UP

TORONTO, Dec. 5.—Following immediately on the heels of the 5 per cent advance on smaller size tires last week, prices on 30x3½ tires are again advanced approximately 20 per cent. Prices are now over 50 per cent higher than those which ruled in April of this year on this size of tire. Tubes, which were advanced last week, were not changed to correspond with the further advance of tires. Tire manufacturers also have announced an advance in the price of gums, combination vulcanized and unvulcanized patching rubber and fabrics for repairing cord tires. These advances are directly due to the strong crude rubber market.

NEW HUDSON DEALERS

COLUMBUS, O., Dec. 5.—The Walter B. Zimmermann Co., central Ohio distributor for the Hudson and Essex has announced a number of agents in the territory, outside of Columbus, which is covered by it. The dealers and localities are:

Logan, F. C. Ambrose; Milford Center, L. W. Anderson; Washington C. H., The H. & E. Motor Co.; Ashley, C. L. Bennett; Adelphi, C. B. Boyd; Groveport, Buchman & Gloyd; Chillicothe, O., L. Cartright Motor Co.; Circleville, O., L. Cartright; Fredericktown, H. E. Cassell & Son; New Straitsville, P. C. Clark; Mt. Sterling, Mt. Sterling Hudson Co.; Delaware, J. M. English; Cresline, W. W. Gallentine; Plain City, F. H. George; Danville, H. K. Darrah; Dresden, Ryan Motor Sales; Shelby, W. C. Gump & Co.; Pickerinton, Hanna Garage; Hebron, Hebron Garage; Upper Sandusky, Charles Johnson; Mt. Vernon, Singer Hudson Motor Sales Co.; Lancaster, George W. Johnson Motor Co.; Gahanna, Clotts & Sindel; Johnstown, Johnstown Hudson Co.; Crooksville, Gordon Appleman Co.; Roseville, Golden

Visits His Dealers By Plane

SAN FRANCISCO, Dec. 5.—An advertising stunt which received much notice in California, was staged by D. C. Warren, Velie distributor for central and northern California, when he used an airplane to call on his agents in several towns, and announce to them the arrival of new models of the Velie. Warren called on dealers in San Rafael, Santa Rosa, Marysville, Sacramento, and Stockton, all the towns in which there were landing fields.

Rule Garage; Marion, Lott & McKim; New Washington, Ludhart & High; London, W. J. Meech; Mansfield, McMullen Motor Sales; Galion, George C. Patterson; West Jefferson, Pence & Barber; Richmond, Perry Auto Sales, Bucyrus, A. J. Pfeifer; McConnellsville, Robinson Bros. Motor Co.; Nelsonville, Rodebush Garage; Marysville, The Scheiderer Motor Co.; Mt. Gilead, C. D. Schaff; New Lexington, Schuster Motor Sales; Utica, Smith-Wolfe Oil Co.; Zanesville, Shannon Motor Sales; Centerburg, Thorp's Garage; Pataskala, The Van Motor Co.; Newark, B. V. Weakley; Sunbury, John Williamson & Sons; Westerville, N. C. Farber; Frazersburg, Riley Motor Sales and Zanesville, Triangle Motor Sales.

Demand for Tractors in South Promises Record

ATLANTA, Dec. 5.—Due to the heavy demand for tractors this year in the south for industrial use, this business is estimated to be at least 100 to 125 per cent better than last year. Tractor dealers in the southeastern territory are almost certain to enjoy one of the best years in the history of the business, providing sales continue to hold up the next six weeks as they have the last four or five months.

In addition to this industrial demand for tractors there has also been a marked increase the last two or three months in agricultural tractor sales, the total business of the southeastern dealers from August to October, inclusive, estimated to have exceeded the corresponding period of last year by at least 60 per cent.

With both tractor and power farming equipment sales in this district during November certain to exceed the volume of business enjoyed during November, 1924, this will make the eighth consecutive month that dealers in the Southeast have enjoyed a substantial gain in this business over the corresponding months of last year, the average gain in sales for this eight month period estimated at close to 50 per cent.

HAS NEW MANIFOLD

MISSOURI VALLEY, Ia., Dec. 5.—The Patent Model Co. of this city has begun the manufacture of an intake manifold carburetor heater which is designed to give quick starting in cold weather.

Hoover Reports on Work of Automotive Division in 1925

Review of Activities Shows Continued Expansion in Service Given by Bureau

WASHINGTON, Dec. 5.—Continued expansion and improvement of the facilities of the Automotive Division with improved export statistics and informational services is reported by Secretary of Commerce Herbert Hoover in his annual report just made public here.

Reviewing the activities of the Automotive Division during the fiscal year ended June 30, 1925, Secretary Hoover points out that representatives of the division visited more than 50 automotive plants and conferred with executives at Detroit, Cleveland, Toledo, Pittsburgh, Philadelphia, Cincinnati, Chicago, St. Louis, Indianapolis, South Bend, Lansing and Springfield, Ohio.

"To obtain direct information on foreign competition," says the portion of the report relating to the Automotive Division, "the chief of the division visited nine European countries, attended international motor shows at Paris and London, inspected more than 30 automotive manufacturing plants, and interviewed numerous foreign government and trade-association officials, manufacturers and dealers.

"Conferences have been held with officials of the National Automobile Chamber of Commerce, the Motor and Accessory Manufacturers Association, the National Association of Engine and Boat Manufacturers, and the Motorcycle and Allied Trades Association.

"Special information has been furnished various legislative and executive departments on exportations, importations, tariff restrictions, labor, consumption of material, use of motor cars, etc."

BELKNAP JOINS MCFARLAN

CONNEERSVILLE, Ind., Dec. 5.—Robert B. Belknap, who, for the last several years has been identified with the Lexington Motor Company in various executive capacities, leaves the position of assistant to the general manager of that organization to accept the second vice presidency of the McFarlan Motor Corporation.

CRAIG SUCCEEDS GLENNY

MINNEAPOLIS, Dec. 5.—With the appointment of E. F. Glenny as supervisor of territorial organization for the Olds Motor Works, G. M. Craig has been made his successor as manager of the Minneapolis Oldsmobile branch and supervisor of the Northwest zone with Minneapolis headquarters. The branch includes Minnesota and North Dakota, 20 counties in Wisconsin and eight in Montana. The zone includes supervision of distributors in Sioux Falls, S. D., who cover the state and part of Iowa; also distribution from the Billings headquarters, which includes the state and the northern half of Wyoming.

Orders Still Lead Output On Central Eastern Coast

Deliveries Big Problem in Carolinas After Three Months of Cautious Progress

CHARLOTTE, N. C., Dec. 5.—A demand for automobiles and motor trucks of proportions seldom equalled in this territory at this season of the year is emphasizing the unpreparedness of dealers and distributors for unseasonal conditions and slow progress is being made in reducing the accumulation of orders as the year enters its closing month.

The automotive trade, which proceeded cautiously three months ago, now is struggling to obtain deliveries to meet the retail demand. Deliveries from the factories are increasing. Dealers' reports agree that the volume of retail orders is holding about steady. Sales effort apparently is increasing somewhat in vigor.

Explanations of this condition cover a wide range of opinion and none of them appears to be entirely satisfactory. While all lines of industry and trade are prosperous in this state, South Carolina conditions, recently somewhat unsatisfactory, are showing improvement, especially in the Piedmont section, where the demand for motor trucks is decidedly better than it was a month ago.

The movement of accessories into dealers' and consumers' hands was increasing rapidly with the approach of the Christmas holidays and the steady fall of the temperatures, according to jobbers' reports. Gift accessories were selling rapidly when December arrived.

Denver Reports Improved Conditions for November

DENVER, Dec. 5.—Trade conditions in Colorado continue to improve. November has shown approximately a 10 per cent increase over October, and 15 per cent over November 1924. Early frosts in the Horn District, comprising the territories surrounding, Boulder, Loveland, Longmont, Greeley and Fort Collins have cut the potato crop in two, and the early drouth made a light beet crop, so this section is below the average for five years, with little prospect of improvement this season.

Northeastern Colorado and the San Luis valley are much above par, and all business is excellent. From Denver south to Pueblo conditions are fair, and on the Western Slope they are good. Denver itself is going ahead in spite of several failures during November.

Local dealers report considerable advance buying of cars for Christmas. All over the state the used car market is improved, due to caution in trading, and reasonable prices on resales. Installments are being paid promptly and the last month showed very little repossession in this section.

"SILVER SHELL" APPEARS

ST. LOUIS, Dec. 5.—The first issue of "The Silver Shell," designed for Moon and Diana distributors, dealers and salesmen and issued by the Moon Motor Car Co. made its first appearance last week. Harry Ford, is managing editor of "The Silver Shell". The paper is to be issued twice a month and will contain information and news of particular interest to members of the Moon and Diana organization. Factory announcements, comments on current conditions by Moon executives, pictures of various activities of the Moon Co. will be contained in the paper.

Citroen Introduces New Four Wheel Brake Car

PARIS, Nov. 21—(by mail)—With the appearance this week of the new model 10 h.p. Citroen, every French automobile manufacturer now uses four-wheel brakes. The Citroen is a modification of the chassis which has been in production since 1919, having a special front axle, semi-elliptic front springs in place of quarter elliptics, and new frame members. The mechanical front wheel brakes are cable operated by a brake camshaft mounted on the axle itself. With four passenger phaeton body and balloon tires the new Citroen sells at 21,500 francs.

The first to get into big production after the war, with a car having been designed during 1917 and 1918, Citroen was unable to follow the move towards front wheel brakes as rapidly as other French manufacturers, and because of this he has been at a disadvantage during the last two years, for rival firms, Renault in particular, have directed an active campaign against all cars not equipped with four-wheel brakes.

To make the change over to front brakes it was necessary, in addition to a new and stiffer axle with closed eye ends and inclined steering pivots, to abolish the quarter elliptic front springs in favor of semi-elliptics, and this involved changing the chassis side rails. The small 5 h.p. Citroen remains as before with a transmission and rear wheel brakes.

BAKER R & L CHANGES NAME

CLEVELAND, O., Dec. 5.—The Baker R & L Company has changed its corporate style to The Baker-Raulang Company. The company is a quantity-producer of closed bodies for automobiles under the name "Raulang" and also a complete line of electrical industrial material-handling tractors and trucks under the "Baker" name. Both products have been widely and consistently advertised for many years and the name-change has been made to effect a closer and unmistakable tie-up with the company's advertising. The change is a change in name only, as ownership and management continues as before. E. J. Bartlett, for many years vice-president and general manager, was recently elected president, F. W. Treadway, the former president, becoming chairman of the board.

Firestone Shows Sales Gain of \$40,000,000 in Year

Net Income in Fiscal Period Increases More Than \$5,000,000

AKRON, O., Dec. 5.—Report of the Firestone Tire & Rubber Co., showing an increase in sales of approximately \$40,000,000 for the fiscal year ended Oct. 31, is regarded as an indication of what may be expected from statements of other rubber companies for the year.

Sales of the other big rubber and tire companies, including Goodyear, Goodrich, United States, and Fisk, have been about 35 per cent higher this year than in 1924.

Total sales of the Firestone Co. for 1925 were \$125,597,993, compared with \$85,610,000 in 1924.

Net income, after depreciation, federal taxes and interest, was \$12,800,412, against \$7,116,689, in 1924.

Announcement is made of the sale of \$10,000,000 additional 7 per cent preferred stock. Officials of the company explained that the expansion of business and the high cost of crude rubber requires a larger working capital.

The Oct. 31 balance sheet shows a surplus of \$39,762,281. Total assets are \$72,298,535, of which \$43,500,000 are net quick.

200,000 Attend Motor Car Show in Beaumont

BEAUMONT, Tex., Dec. 5.—The automobile dealers of the cities of South Texas and Western Louisiana associated themselves with the Automobile Dealers' Association of Beaumont in staging the annual motor car show here. The show was staged in connection with the South Texas Fair and was attended by more than 200,000 persons.

All the latest motor vehicles were on display. The passenger cars occupied the greater part of the space for show purposes and were the center of attraction, but the dealers exhibited the latest trucks and trailers to merchants and oil men who rely on motor cars for rapid transportation.

In the passenger cars, closed bodies predominated. Gay colors featured the finishings. More convenience, more room and a general trend to smaller cars appeared in evidence from an inspection of the newest models.

A. A. A. APPOINTS CLARK

WASHINGTON, Dec. 5.—The appointment of Charles P. Clark as assistant general manager of the American Automobile Association, to take effect immediately, is announced from the national headquarters of the A. A. A. Although the appointment is just officially announced, Mr. Clark has been acting in the capacity of assistant general manager for several months, especially during the absence of General Manager Ernest N. Smith from Washington in connection with important organization problems.

Revenue From Industry in 10 Months Gains Heavily

Government Receives \$64,578,981 More Thus Far in 1925 Than in Same Time, 1924

WASHINGTON, Dec. 5.—A decrease of \$3,417,458.22 is noted in the internal revenue collections from the automotive industry during October, 1925, as compared with those of October, 1924, but an increase of \$8,103,668.61 still stands in collections from the automotive industry for the period from July 1, 1925 to October 31, 1925 as compared with the period from July 1, 1924 to October 31, 1924, it is announced here. The October, 1925, collections are given as \$7,319,443.42.

A study of the collections shows that trucks, automobiles and motorcycles contributed the bulk of the \$3,417,458.22 while automobile parts and accessories came nearest to holding their own. The October, 1924, collections from "automobile trucks and automobile wagons" is set at \$580,027.97 as compared with \$1,301,298.25 in October, 1924; "other automobiles and motorcycles" during October, 1925, paid \$5,089,306.35 as compared with \$7,468,652.72 in October, 1924 while "automobile parts and accessories" in October, 1925, paid \$1,650,109.10 as compared with \$1,966,950.67 in October, 1924.

Total collections for the month of October, 1925, amounted to \$109,045,342.92 compared with \$113,548,599.44 for the month of October, 1924, a decrease of \$4,503,256.52. The collections from July 1, 1925 to October 31, 1925 amount to \$800,746,404.80, compared with \$736,167,423.68 from July 1, 1924 to October 31, 1924, an increase of \$64,578,981.12.

AUBURN REDEEMS STOCK

AUBURN, Ind., Dec. 5.—The Auburn Automobile Company has filed certificates with the secretary of state, redeeming \$500,000 preferred stock, and also has filed certificates increasing the capital stock from \$1,500,000 to \$3,000,000. The increased issue is of common stock.

McKINNON BUYS WILLIAMS

ST. CATHARINES, Ont., Dec. 5.—An industrial merger of importance is announced by General Manager B. W. Burtzell of McKinnon Industries, Ltd., which company has secured by purchase outright, the entire plant and business of the J. H. Williams & Co., Ltd., in this city. The latter employs 80 men and manufactures small tools. Both plants will be continued in operation under the McKinnon management and extensions are planned at the new acquired factory. The McKinnon Company is one of the oldest of St. Catharines, having been conducted here for 51 years. In April, 1920, the interests of Whitman & Barnes Mfg. Co., of Chicago, and St. Catharines, Ont., were merged with those of J. H. Williams & Co.

CHEVROLET SALESMEN TIE

PORTLAND, Ore., Dec. 5.—September was an exceptionally good month for Chevrolet sales on the coast and there were ties for both first and second place in what is known as Zone 19, which comprises western Montana, Idaho, Washington and Oregon. B. L. Sanderson of the Pierce-Harrison Motor Company of Medford, Ore., and H. George of the Nugent Motor Company, Everett, Wash., tied for first place in their zone with a percentage of 325 of their quotas. A. D. Martin of the Fields Motor Company, Portland and C. Alexander of the Mount Hood Motor Company of Hood River, Ore., tied for second with a percentage of 275.

R. M. W. Shaw Is Appointed Olds Advertising Manager

LANSING, Mich., Dec. 5.—The appointment of R. M. Wilmot Shaw as advertising manager of Olds Motor Works is announced by D. S. Eddins, general sales manager of the company. Mr. Shaw has



R. M. Wilmot Shaw

been connected with the Oldsmobile organization for nearly four years as assistant advertising manager. Previous to that he was with newspapers, in both the business and editorial departments for five years. Mr. Shaw succeeds E. J. Shassberger, former advertising manager, recently was appointed territory analyzation manager.

AJAX DEALERS MEET

ST. LOUIS, Dec. 5.—George C. Hubbs, general sales manager of the Ajax Motors Co., Racine, Wis., told salesmen and associate dealers of the Southwest Nash Motor Car Co., Nash and Ajax distributors here, of plans of the Ajax Company to enlarge its factory to enable the company to meet the nation-wide demand for the Ajax car, at a luncheon meeting at the Warwick Hotel arranged by the Southwest Nash Co. The production of the Ajax, Hubbs declared is still far behind the demand.

Chicago Dealers Report Good Business Throughout Month

Stocks Show Slight Increase in Preparation for Holiday Sales Rush

CHICAGO, Dec. 5.—In general, November sales were more numerous than those of October. There was little or no trouble from the standpoint of delivery, as production in nearly all factories has been sufficiently heavy to supply the demand.

Stocks in the Chicago territory are increasing to some extent. Dealers are working under the theory that stocks naturally should increase slightly at this season in order to give immediate delivery on holiday business.

The increase in sales over November averaged about 10 per cent. As compared with last, November sales were about 25 per cent greater.

Collections are good and repossessions few. A tendency toward more lenient terms has cropped up, but has been frowned up by all recognized authorities and has not become general as yet.

November sales of accessories are about even with October and from 10 to 15 per cent greater than November last year.

Tire sales have shown a decided increase, believed largely due to recent increases in original equipment prices and the reports of further potential increases in retail lists.

Optimism predominates among the dealers and wholesalers, and the campaigns to boost Christmas business have already justified themselves beyond expectations.

ELECTRICAL MEN TO MEET

DETROIT, Dec. 5.—D. W. Burke, president of the Auto Electric & Service Corp., and secretary of the Automotive Electric Service Association, announces that the 1926 convention of the association will be held on Feb. 2 and 3, during the Chicago Automobile Show, in the Florentine room of the Congress hotel, Chicago.

NORTH EAST OPERATING

TORONTO, Dec. 5.—The North East Electric Co. of Canada, Ltd., has begun the manufacture of North East starters, generators and ignition equipment. The company will supply electrical equipment to car manufacturers of Canada who are using North East products as standard. The new company occupies the entire building that formerly housed the Canadian branch of North East Service, Inc. In addition to the manufacture of equipment it will take over the service work in Canada formerly handled by the Toronto branch. J. W. Neun who was formerly manager of the Toronto branch is in charge of the new company.



Along Automobile Row



BOSTON.—The Commonwealth Overland Company has been organized here to market the Overland and Willys Knight lines in Boston with salesrooms and service departments at 838 Commonwealth Avenue in the heart of automobile row.

LITTLE ROCK, Ark.—R. B. Lavender, for seven years connected with the American Southern Trust Company, has resigned to join the sales force of the S. R. Thomas Auto Company, local Dodge Brothers agency.

MOLINE, Ill.—The Service Motor Sales Company of Rock Island has opened its new showroom and garage on Moline's main thoroughfare, Fifth Avenue. Julius Gottlieb of Rock Island is president of the company which has agencies for the Star, Durant and Flint cars in Rock Island, Henry and Mercer counties, Illinois, and Scott and Clinton counties in Iowa.

RALEIGH, N. C.—The interests of B. S. Aronson and O. R. Brown in the H. and E. Motor Company of Raleigh, were bought by the Horton Motor Company, Inc., which will operate the business purchased at the same location. By this transaction, James Horton, who was a Hudson dealer in 1916, again acquires that line, as well as the Essex.

PENDLETON, Ore.—A contract has been let by G. W. Byers for a new garage building at East Court and Vincent Streets which will provide a new home for the East Oregon Motor Company, Ford dealer.

DECATUR, Ill.—C. H. Wilson has joined the sales force of the Gardner car with the Reo Motor Sales Co., 250 East William Street. The Reo agency handles the Gardner, Gray and Reo.

SPOKANE, Wash.—N. E. Rieth is now the sole owner of the Rickenbacker agency here and the name has been changed from Hume & Rieth to the Rickenbacker Spokane Agency. D. F. Hume no longer serves the firm in any capacity, it is announced. The agency has moved into enlarged quarters at 226 E. Sprague avenue.

SYRACUSE, N. Y.—George B. Tyler, manager of the Ford Buffalo branch addressed a meeting of 75 Ford dealers in this part of the state at a meeting at the Hotel Syracuse.

TOLEDO.—The Overland East Toledo Co., has been chartered with an authorized capital of \$25,000 to deal in autos and accessories.

ROCKFORD, Ill.—Salesmen and field representatives of the Burd High Compression Ring Company, manufacturer of parts for motor vehicles, met here in a two day convention. Lectures and factory demonstrations were features, and there was a sales conference in conjunction.

ST. LOUIS.—Gamache Motor Car Co., 2626 Sidney Street, has been named as an authorized Oldsmobile dealer by the De Luxe Automobile Co., Oldsmobile distributors here. J. E. J. A. and D. T. Gamache are proprietors of the concern.

BIRMINGHAM.—Announcement has been made of the installation of a battery department, top and body department, and wood working department in the Packard division of the McCormack Brothers Motor Company of Birmingham.

DETROIT.—Horace Potter, one of the best known Packard salesmen in this city and formerly connected with the Detroit branch of the Packard Motor Car Company, has been named to aid in handling the custom body business of the company. R. E. Chamberlain, general sales manager has announced.

HARTFORD, Conn.—James W. Mayers, proprietor of the Sigourney Garage, in observance of seven years he has been in business entertained his sales service force at dinner at the Hotel Bond Annex. Mayers is an associate dealer in Hupmobiles.

LOS ANGELES.—Canon A. Doyle, formerly general sales manager for Union Motors, Inc., erstwhile Maxwell distributor, and more recently retail sales manager for Geer-Robbins, Chrysler distributor, has joined forces with Arthur J. Shafer, of the Liberty Automotive Service, in the establishing of a metropolitan Hudson & Essex agency.

CLINTON, Ia.—The Van Epps Sales Company, for four years Velie agent in this city, has accepted the Peerless agency also and will display both cars on its floors.

ELLENSBURG, Wash.—Valley Chevrolet Company has been organized by J. H. Padavich, Vern Ewan, M. V. Padavich and C. F. Trower.

MILWAUKEE.—The Moore-Overland Co. of Milwaukee, has established a used car department at 778-782 Twentieth Street, between Fond du Lac and North Avenues. The entire building will be devoted to the reconditioning, display and sale of used cars exclusively.

SPRINGFIELD, O.—H. J. Brubaker, president of The Brubaker-Saunders Co., dealer in Willys Knight and Overland cars, announces that Karl Frankenberg will be sales head and that LeRoy McCoy will have charge of the service department.

SPRINGFIELD, Mass.—Edward J. Donovan has purchased the business of the Parmenter Co., wholesale and retail dealer in automotive parts. Mr. Donovan was for five years treasurer of P. D. Powers, Inc., Hudson and Essex dealer in North Adams and later had the franchise for the same cars in Great Barrington, Mass. For the past two years he has been in charge of Hudson and Essex sales for the Arrow Co. of Springfield.

ST. PAUL, Minn.—The Mack International Motor Truck Corp., 2234 University Avenue, has bought an acre and a half of land at University and Cromwell Avenues, one block from the Overland building, on which it will erect a \$400,000 building next year for assembly, sales and service.

PHILADELPHIA.—The Penn-Flint Company of Philadelphia, Pa., announces the appointment of Thomas B. Seaton of Merchantville, N. J., as a Flint dealer.

MONTREAL.—Clermont Motor Sales, Ltd., 4450 St. Denis Street, has been appointed authorized agent of McLaughlin-Buick cars.

GRAND FORKS, N. D.—Buick dealers throughout this district recently attended a conference held by the J. E. Sandlie Co., Inc., wholesale distributors, here. Speakers included Jalmar Evenson, assistant sales manager of the Pence Automobile Co. of Minneapolis, Sam Walton, service manager and Chester Walker, territorial manager of Pence, A. A. English of the General Motors Acceptance Corp., and W. A. McMillan, manager of the Pence branch at Fargo, N. D.

CHICAGO.—A digest of the laws of Illinois which particularly affect the automotive industry, is being published by the Illinois Automotive Trade Association. The book will contain about 24 pages and a feature will be several pages devoted to legal forms of various kinds used by dealers in connection with their business transactions.

PROVO, Utah.—F. J. Russell, Chrysler agent at Kamas, has taken over the Provo agency of this car, succeeding the Richins Motor Co.

SAN FRANCISCO.—F. J. Helderle, formerly secretary and treasurer of the Sterling Products Corp. of St. Louis, manufacturers of replacement parts, has joined the George W. Miller Co., known as the "House of a Million Parts," as general manager here.

SPOKANE, Wash.—C. Lloyd Lockwood, formerly with the Lockwood Motor Company of Missoula, Mont., has been appointed retail sales manager of Ajax cars for the Spokane Nash Company.

CAMBRIDGE, Ill.—T. M. Bloedorn has been named sales manager for the Tracy-White Motor Corporation in this city, joining the firm with which he was associated three-and-a-half years before the Tracy Motor Corporation was taken over by the Kelly Motor Company.

SYRACUSE, N. Y.—The Bresse-Chevrolet Co. of this city is erecting a new four story sales and service building in the heart of the downtown district. The building will be ready for occupancy in four months.

BIRMINGHAM.—J. J. Jordan has been appointed Durant-Star dealer for the cities of Birmingham and Bessemer. Mr. Jordan is well known in this section and will maintain show rooms in both cities.

MILWAUKEE.—The Anger-Chevrolet Co. of Milwaukee has gained distinction of being the first exclusive used car organization to establish downtown Milwaukee headquarters, through leasing of 12,000 square feet of floor space at 614 Grand Avenue. Headquarters of the company have been maintained for many years at Eleventh Street and Grand Avenue, but this site has been purchased for a new hotel.

HILLSBORO, Ore.—Ralph S. Wittenberg is the new Chevrolet dealer, having opened the Tualatin Valley Chevrolet Company.

ST. PAUL, Minn.—The E. B. McGill Motor Co., University and Lexington Avenues, sales agent for the Chrysler, has been bought by W. S. Morris, banker of Wheaton, Minn.; S. C. Odenberg, attorney of Wheaton, and R. W. Sunbeck, district manager for a Duluth wholesale grocery house.

QUINCY, Ill.—Don A. Wheeler and Otto Mohrenstecher have organized the Wheeler Motor Sales Company to handle the Cadillac and Chrysler sales in this vicinity.

SYRACUSE, N. Y.—R. M. Schiele, formerly with the Thomas B. Jeffrey Co. at Kenosha, Wis., has been appointed district manager for the Franklin Automobile Co.

DECATUR, Ill.—The Spiess Auto Sales Co., 244 East Wood Street, has purchased lots at the corner of Church and Wood Streets, and announced that within a short time construction will begin on a one-story and basement garage and display rooms for its Hudson and Chrysler salesroom.

TACOMA, Wash.—The following automobile concerns have recently added the Matched-Unit radio instruments and accessories manufactured by Stewart-Warner Speedometer Corporation, which they will handle in addition to their automobile business; Manley Motor Car Company and Neilsen & Hansen.

With the Associations

Sales Directors Meet

ST. LOUIS, Dec. 5.—Joseph N. Kellerman was elected chairman of the Sales Directors' Bureau, recently formed branch of the St. Louis Automobile Dealers' Assn., at its first meeting held at the Coronado Hotel. L. M. Stewart was named vice chairman. Robert E. Lee, manager St. Louis A. D. A. was named secretary. Sales executives of about 50 of the leading automobile firms of the city were represented by their sales executives.

Lee, who was largely instrumental in forming the bureau, presided. He stated that the name "Sales Directors' Bureau" had been adopted to avoid conflict with the Sales Managers' Bureau of the St. Louis Chamber of Commerce.

"A sales manager is the court of last resort in the contest between the salesman and the owner of the business," Lee said. "He is of necessity a diplomat, a tactician, a psychologist, a glad handler, a philosopher, friend and guide and perforce a master salesman, and a master salesman is one who can show others how to sell, who can bring his own skill and experience and tact to the aid of men on his staff who are on the verge of failure."

Portland Picks Officers

PORTLAND, Ore., Dec. 5.—Members of the Portland Automotive Trade Association chose George L. Sammis of the Sunset Electric company as president, at the annual meeting. Sammis succeeded Edward Burke, who was presented with a Morris chair by the membership in appreciation of his work during the past year.

Other officers chosen were Henry Ward, vice president, Thomas Bradshaw, second vice president, J. E. Nelson, third vice president, A. E. Foss secretary; R. W. Lee, treasurer; Fred Dundee and W. R. Bevins, directors, and the following vice presidents for the various crafts included in the organization:

E. J. Berg, garage and repair shops; E. H. Allen, battery and electrical shops; H. B. Black, machine shops and re-grinders; Paul Staiger, paint shops; S. O. Armstrong, sheet metal works; and Paul Bossart, top and trim shops.

Illinois Trade to Meet

PEORIA, Ill., Dec. 5.—The annual meeting of the Illinois Automotive Trade Association has been fixed for Feb. 9 at Springfield. A nominating committee has been appointed to prepare a slate of officers. Considerable business of importance is to be transacted and there will be talks by several men, prominent in the automotive industry.

Pushes Winter Accessories

GREENSBORO, N. C., Dec. 5.—The North Carolina Automotive Trade Association, with headquarters here, is active in its efforts to serve the motoring public while at the same time serving its own interests. One of the association's activities having this dual nature is related to sales of accessories, and, at this season of the year, the organization is endeavoring, largely by means of newspaper publicity, to increase the sales of cold weather necessities and aids to comfort for the motorist.

Among the articles stocked by the accessories dealers to which the association is pointing public attention are heaters, winter fronts and hood covers, automatic windshield wipers, anti-freeze mixtures, chains, robes and gloves.

The association also is particularly active now in its efforts to eliminate, as nearly as possible, the unregulated bright headlights and the lack of tail lights, which are emphasized as dangers to traffic.

Electric Report Soon

CLEVELAND, Dec. 5.—Announcement of the reports of the standardization committee of the Automotive Electric Association on its projected booklet on headlights and on specifications for electric equipment of motor coaches may be expected January 11, according to announcement by Earl Turner, manager of the association, following a meeting of the committee here.

Among the electric experts collaborating on the reports are: Burns Dick, chief engineer of the Wagner Electric corporation, St. Louis, who is chairman of the committee; C. F. Gilchrist, chief engineer of the Electric Auto Lite company, Toledo; T. L. Lee, chief engineer of the Northeast Electric company, Rochester, N. Y.; F. H. Prescott, chief engineer, Remy Electric company, Anderson, Ill., and W. P. Loudon, assistant chief engineer, Dayton Engineering Laboratories company, Dayton, O.

Montreal Boosters Elect

MONTREAL, Dec. 5.—At the annual meeting of Automotive Boosters' Club No. 11, Eastern Canada, held at the Old Colony Club here, the following officers were elected for the coming year:

President, R. M. Oxley, Canadian National Carbon Co.; vice president, Charles Morgan, Raybestos Co.; secretary, T. J. Burke, Pres-O-Lite Company of Canada; treasurer, Fred Hadley, Hall Thompson Co.; directors, W. P. Kearney, Dominion Chain Co., Art Brittain, Lyon Bumpers Equipment, R. Sewell, Champion Spark Plug Co.

The office of president was made vacant by the retirement of A. J. Hopkins who has left for Florida.

Milwaukee Has Celebration

MILWAUKEE, Dec. 5.—Development of automobiles from the infant stages of the industry to its present relative maturity was traced at the dinner celebrating the fifteenth anniversary of the Milwaukee Automotive Dealers' Association held at the Elk's Club. Many amusing features of the early days of the industry were reviewed at the meeting.

The dinner was attended by about 300 of the leading dealers and distributors in the Milwaukee territory and by some of the prominent manufacturers in Wisconsin. In addition special invitations were extended I. G. Hickman, first president of the association, who was an honored guest, and Alfred Reeke, former president of the association, now a Nash distributor in Cleveland.

Mr. Hickman told of the great changes wrought in automobile merchandising since 1910 when the association was formed. James T. Drought, attorney for the organization, vividly told of some of the early day automobile endurance tests held in this district.

Mr. Reeke lauded the progress made by the Milwaukee dealers' association since the formation of the organization which he directed. Mr. Reeke was also a guest of honor and entertained the dealers with several songs after his talks were completed. Bart J. Ruddle, executive secretary of the dealers' association spoke on the progress and improvement of automobile shows. His talk was illustrated with pictures of the early day motor expositions held in Milwaukee, which drew many laughs from the dealers. Frank Cannon, executive secretary of the Wisconsin Good Roads Association described the progress made by the Wisconsin road construction enterprises of the past few years.

Dr. F. W. B. Achen, president of the association, presided at the banquet.

Radio Trades Organized

LOS ANGELES, Dec. 5.—The Radio Trades Association of Southern California, which embraces in its membership jobbers, distributors, manufacturers' agents, retailers and broadcasters, was formally launched at a meeting held at the Alexandria Hotel in Los Angeles. Meetings will be held once a month throughout the year.

At the organization meeting, Earle C. Anthony, president of Earle C. Anthony, Inc., Packard distributors and operator of one of California's leading broadcasting stations, delivered a report on the recent radio conference held at Washington.

Short addresses given by various jobbers and retailers indicated that the radio business is unusually active throughout Southern California this year.

Coming Motor Events

Automobile Shows

New York.....	Jan. 9-15	National Automobile Show in Grand Central Palace.	Washington.....	Jan. 30-Feb. 6	Automobile show under auspices of Washington Automotive Trade Association in Washington Auditorium Building, Rudolph Jose, manager.	Great Falls, Mont.....	Feb. 16-20	Eleventh Annual Show by Montana Auto Distributors Association.
Newark, N. J.....	Jan. 16-23	Nineteenth annual Automobile Show under auspices of New Jersey Automobile Exhibition Co., Chamber of Commerce Building.	San Francisco.....	Jan. 30-Feb. 6	Tenth annual Pacific Automobile Show under direction of Motor Car Dealers' Association of San Francisco, in Exposition Auditorium, G. A. Wahlgreen, 215-16 Humboldt Bank Bldg., manager.	Hartford, Conn.....	Feb. 20-27	Automobile show by Hartford Automobile Dealers' Association in State Armory, Arthur Fifoot, manager, Hotel Bond.
Buffalo, N. Y.....	Jan. 16-23	Buffalo automobile show by Buffalo Automobile Dealers' Association in 174th Regimental Armory, Carlton, C. Proctor, manager, headquarters, Hotel Statler.	Washington.....	Jan. 30-Feb. 6	Washington Trade Association Show in Auditorium Building.	St. Louis.....	Feb. 20-27	19th Annual Automobile Show, City Market Bldg., St. Louis Automobile Dealers Assn.
Milwaukee.....	Jan. 16-23	18th Annual Automobile Show, Auditorium.	Cumberland, Md.....	Feb. 1-6	Automobile Show in New Armory, Automobile Dealers Assn. of Cumberland.	Grand Rapids, Mich.....	Feb. 22-27	Seventeenth Annual Show by Passenger Car Dealers Association.
Cincinnati.....	Jan. 16-23	Cincinnati Music Hall, Cincinnati Automobile Dealers Association.	Scranton, Pa.....	Feb. 1-6	Passenger Car Show in Armory, Scranton Motor Trades Assn.	Peoria, Ill.....	Feb. 22-27	Fifteenth Automobile & Accessories Show, Peoria Automobile Dealers' & Accessories Assn.
Philadelphia.....	Jan. 16-23	25th Annual Automobile Show at Commercial Museum Under Auspices Phila. Automobile Trade Assn.	Denver.....	Feb. 2-6	Annual automobile show under auspices of Denver Automobile Dealers' Association, in Municipal Auditorium, Myron L. Smith, chairman of committee.	Omaha.....	Feb. 22-27	Twenty-first Annual Automobile Show under auspices Omaha Automobile Trade Association, Inc., in Municipal Auditorium, A. B. Waugh, manager.
Columbus, O.....	Jan. 18-23	Show in Motor Hall by Columbus Automobile Dealers Co.	Atlantic City, N. J.....	Feb. 2-9	Auto Show on Million Dollar Pier by Atlantic City Auto Dealers Assn.	Wilmington, Del.....	Mar. 1-6	11th Annual Show, Hotel duPont, Wilmington Automobile Trade Assn.
Elmira, N. Y.....	Jan. 18-23	16th Annual Show, Elmira Automobile Merchants Assn., Inc., N. Y. State Armory.	Springfield, Ill.....	Feb. 3-6	Seventh Annual Show in State Arsenal by Springfield Auto Dealers Assn.	Boston.....	Mar. 6-13	Boston Automobile Show under auspices of Boston Automobile Dealers' Association, Inc., and Boston Commercial Motor Vehicle Association, Inc., in Mechanics' Building, Chester I. Campbell, manager, 329 Park Square Bldg.
Kalamazoo, Mich.....	Jan. 19-23	Automobile Show in Armory by Kalamazoo Automobile Trade Association.	Providence, R. I.....	Feb. 6-13	Providence automobile show under auspices R. I. Automobile Dealers' Association, Chester I. Campbell, manager, 617 Industrial Trust Bldg.	Ft. Worth, Tex.....	Mar. 6-14	Show in Auto Building at Southwestern Fat Stock Show and Rodeo by Ft. Worth Automotive Trades Assn.
Baltimore.....	Jan. 23-30	20th Annual Automobile Show and Second Annual Motor Boat Exhibit, 5th Regiment Armory, Baltimore Automobile Trade Assn., Inc.	Toledo, O.....	Feb. 8-13	Annual show of Toledo Automotive Trades Association in Civic Center Garage, T. J. Cooper, manager, 925 Jefferson Avenue.	New York.....	Jan. 11-13	Second World Motor Congress, under auspices of National Automobile Chamber of Commerce.
Brooklyn.....	Jan. 23-30	Fifteenth Annual Automobile Show in 23rd Regiment Armory, under auspices of Brooklyn Motor Vehicle Dealers Association.	Schenectady, N. Y.....	Feb. 8-13	Fifth Annual Automobile Show in State Armory by Schenectady Automotive Dealers Assn.	Chicago.....	Feb. 9-16	American Drivurself Association Annual Convention.
Detroit.....	Jan. 23-30	Detroit Auto Show in Convention Hall by Detroit Automobile Dealers Assn.	Syracuse, N. Y.....	Feb. 8-13	18th Annual Auto Show, State Armory, Syracuse Automobile Dealers Association, Inc.	Chicago.....	Feb. 1-3	Ninth Annual Convention of National Automobile Dealers Association in La Salle Hotel.
Cleveland, O.....	Jan. 23-30	1926 Automobile Show under auspices of Cleveland Automobile Manufacturers' and Dealers' Association, Herbert Buckman manager, in Public Auditorium.	Kansas City, Mo.....	Feb. 12-19	American Royal Bldg.—20th Annual Show, direction of K. C. Motor Car Dealers Association.	Galveston, Tex.....	May 12-13	Tenth annual convention of Texas Automotive Dealers' Association in Galvez Hotel.
Rochester, N. Y.....	Jan. 25-30	18th Annual Automobile Show, Edgerton Park, Rochester Automobile Dealers Assn.	Des Moines.....	Feb. 14-20	17th Annual Automobile Show in Coliseum by Des Moines Automobile Dealers Association.			
Williamsport, Pa.....	Jan. 25-30	Automobile Show by Williamsport Automobile Dealers Assn.	Indianapolis.....	Feb. 15-20	Auto Show Bldg.—15th Annual Motor Show, direction Indianapolis Auto Trade Association.			
Lowell, Mass.....	Jan. 25-Feb. 1	Twelfth Automobile Show in Memorial Auditorium, Automobile Merchants Assn. of Lowell, Inc.	Louisville, Ky.....	Feb. 15-20	Louisville Automobile Show, Armory, under the auspices of the Louisville Automobile Dealers Association, J. Garland Lea, manager.			
Chicago.....	Jan. 30-Feb. 6	Twenty-sixth Annual National Automobile Show and Eleventh Annual Automobile Salon.						

Conventions

Foreign Shows

Coming Feature Issues of Chilton Class Journal Publications

January 1—National Shows Number—Automobile Trade Journal.
January 7—Motor Age—National Shows Number.

January 14—Motor World Wholesale—New York Show Report.
February 4—Motor Age—Chicago Show Number.

February 4—Motor World Wholesale—Chicago Show Report.
February 18—Automotive Industries—Statistical Issue.

JOINS MUSIC MASTER

PHILADELPHIA, Dec. 5.—In order to better take care of its rapidly expanding business, and also help solve the many problems in sales service, the Music Master Corporation has recently established a distribution department. It is expected that the new department will be of great assistance in sales promotion as well as in expediting deliveries to Music Master dealers. H. N. McMenimen has been appointed manager of distribution and placed in full charge of all sales plans and operations. The sales department will hereafter function under his guidance.

RECLAIMING CAPACITY RAISED

AKRON, O., Dec. 5.—To supply the steadily growing demand for reclaimed rubber the Akron Rubber Reclaiming Co. is preparing to increase its capacity 200 per cent by the installation of additional machinery and the construction of another storage room, according to C. E. Bishop, vice-president and superintendent. Other Akron rubber companies, notably the Firestone Tire & Rubber Co., B. F. Goodrich Co. and Goodyear Tire & Rubber Co., are combatting high crude rubber prices by continuing to salvage rubber from discarded manufactured articles.

PACIFIC SHOW PLANNED

SAN FRANCISCO, Dec. 5.—The Tenth Annual Pacific Automobile Show will be held in the Exposition Auditorium here January 30 to February 6 next year. As usual the show will be held under the auspices of the Motor Car Dealers' Association of San Francisco and George A. Wahlgreen, veteran manager will be in charge. Virtually all space is already subscribed. The show will be devoted more extensively than ever to merchandising, to the general public and to meetings, conferences and sales talks. This means that it will be a show for dealers as well as the general public.

Cleveland Car Makers Say November Best on Record

Sales of New Automobiles and Tires Show Slight Decline Early in Month But Recover

CLEVELAND, O., Dec. 5.—The best November on record. Cleveland's entire colony of automobile manufacturers, with one exception, were agreed on this point today as they checked production records for the eleventh month. The single exception is the Cleveland Motor Car Company where 100 workmen have just been laid off temporarily because of a lack of bodies and the inability of the body makers to make prompt deliveries. This unfortunate circumstance prevented the company from hanging up the production record orders on hand warranted.

In the matter of retail car sales the tune must be changed somewhat. The first three weeks of November, although excellent for this season of the year, didn't produce as much business as the first three weeks in October. The final week of the month saw prospects brighten, this being attributed to the holiday season which seems to be getting an early start hereabouts.

Retail tire sales, like retail car sales, showed a noticeable decline over the volume of business for the previous month. Jobbers and retailers of parts all report unusually good business, which seems to coincide with the story told by the parts manufacturers.

Summing everything up, the month of November was most satisfactory for the car and parts manufacturers and the parts wholesalers and retailers, and certainly very far from discouraging for those who retail automobiles.

DEALER LICENSES INCREASE

OLYMPIA, Wash., Dec. 5.—Not only has there been an increase in the number of automobile dealers this year, but License Director C. R. Maybury's record shows that the number of licenses issued to dealers, representing cars used by salesmen, has increased more than 10 per cent. There were 841 automobile dealers licensed last year and they took out 2,997 sets of extra plates at \$10 per set. This year the 903 dealers asked for 3,385 extra sets of plates and thus far in 1925 they have paid \$76,874.80.

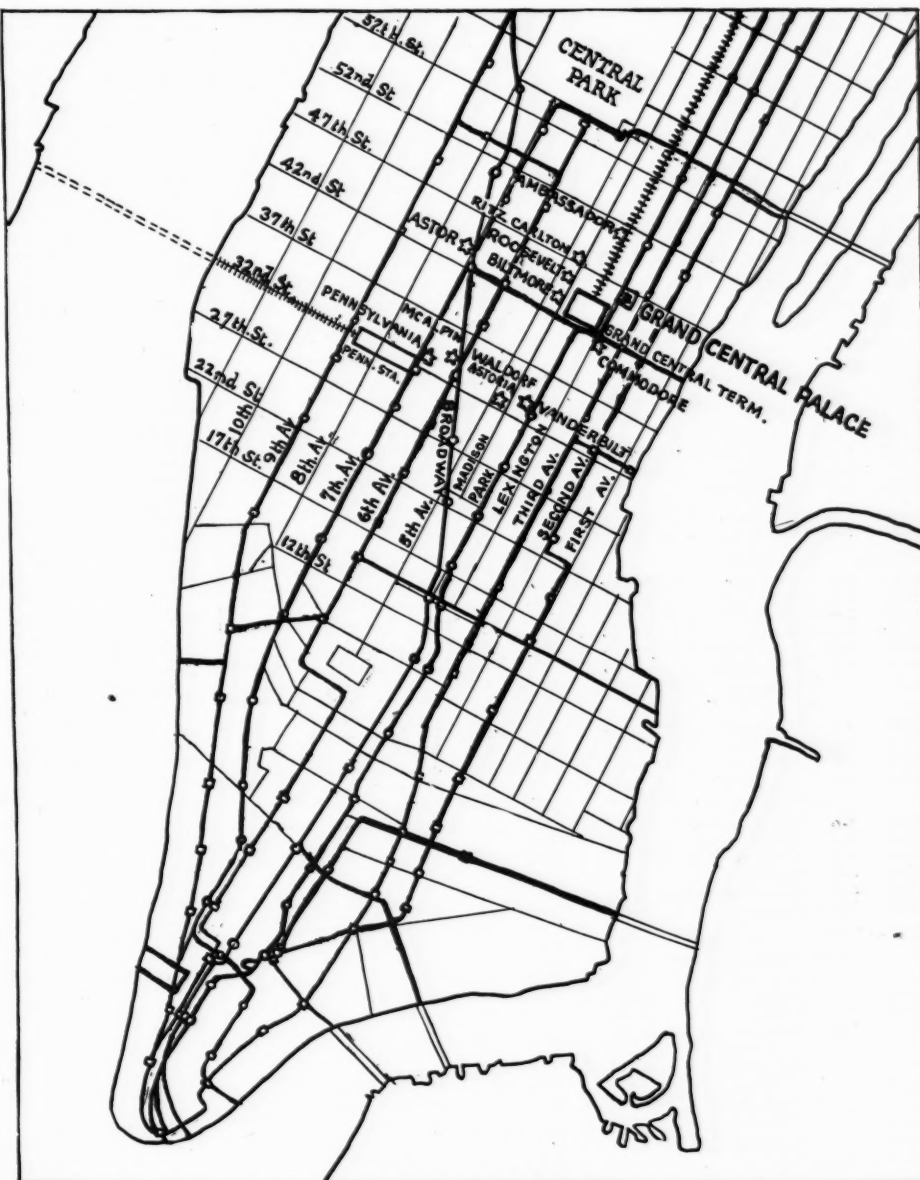
Roadster Plays a Comeback

(Continued from page 12)

closed models but the writer believes that those firms producing an attractive roadster with plenty of speed and power will find a substantial business in this line during the coming year."

Then this one from a company featuring a rumble seat body: "The roadster of today is in reality a five passenger car due to the rumble seat arrangement. The increasing interest may also be attributed to the fact that the roadster is the ideal car for the golf foursome and the compartment is a handy place in which

BACK IN THE CENTER OF THINGS



The Grand Central Palace, where New York's National Automobile Show will be held Jan. 9 to 14, is in the heart of the city and is readily accessible from the leading hotels and the large railway terminals. It is also close to the Broadway theatrical district. Dealers from other cities who attend the show will appreciate the convenience of this location as compared with that used for the show the last two years. The last two years the show was held in the Bronx Armory, more than a half hour's ride from Times Square by subway and elevated. The trade days at the show this year will be Monday and Tuesday and manufacturers of cars, accessories and equipment are making arrangements to meet dealers at the show on those days when the general public will be excluded. The map above shows the location of the Palace and other points of interest.

NEW PAIGE-JEWETT DEALERS

DETROIT, Dec. 5.—The Paige-Detroit Motor Car Company has appointed new dealers as follows:

Dayton Motor Sales, Dayton, Ohio; T. F. Dreher, Patterson, New Jersey; Taylor County Paige-Jewett Company, Crafton, W. Va.; Stevens Garage, Cadiz, Ohio; R. W. Bort Auto Company, Lyons, N. Y.; E. E. Morrow, North Canton, Ohio; Bernard Lichnir, Bronx, N. Y.; Jones-Amos Company, Columbus, Nebraska; Carl Bingham, Vancouver, British Columbia; and Paige-Jewett Company, Leavenworth, Kansas.

to stow golf clubs. The gypsy curtain at the back of the roadster when removed tends to bring the party closer together so that a party of five riding in a roadster may be as sociable as the same party riding in a closed car. In some weather it is most certainly much cooler riding in a roadster than in a closed car even though the windshield and all windows of the closed car may be open. These advantages may be added to the reasons for the roadster's tremendous popularity in the last year particularly."

Prices and Weights of Current Passenger Car Models

SHIP. WT. PASS. BODY STYLE. PRICE				SHIP. WT. PASS. BODY STYLE. PRICE				SHIP. WT. PASS. BODY STYLE. PRICE				
AJAX				SHIP. WT. PASS. BODY STYLE. PRICE				SHIP. WT. PASS. BODY STYLE. PRICE				
108 in. W. B.				2510 5-p Coach 1,045				WT. PASS. BODY STYLE. PRICE				
2210	5-p	Touring	\$865	2570 5-p Std. Sedan 1,095	DURANT							
2410	5-p	Sedan	995	"Six" (112 1/4 in. W. B.)				A-22				
APPERSON "6"				2805 4-p Roadster \$1,625	2225 2-p Sp. Roadster \$900				JEWETT (Continued).			
3100	5-p	Phaeton	\$1,575	2785 5-p Phaeton 1,895	2395 4-p Spec. Touring 930				"New Day"			
3130	5-p	Sp. Phaeton	1,650	2895 5-p Coach 1,445	2505 4-p Coupe 1,090				5-p Sedan \$ 995			
3145	4-p	Coupe	2,050	2935 4-p Coupe 1,795	2505 5-p Sedan 1,150				5-p Sedan de Luxe 1,095			
3570	5-p	Sp. Sedan	2,100	2995 5-p Brougham 1,865	2779 5-p Spec. Sedan 1,280				JORDAN			
3520	5-p	Brougham	2,050	3060 5-p Sedan 1,695	ELCAR				4-p Playboy Road. \$1,695			
"ST8"				3085 5-p Imperial Sedan 1,995	2560 5-p Touring \$1,095				5-p Sedan 1,845			
"ST8"				3090 5-p Crown Sedan 2,095	2900 5-p Coach 1,195				Series "A"			
(118 1/4 in. W. B.)				(118 1/4 in. W. B.)				3340 5-p Touring 2,275				
3520	5-p	Sp. Phaeton	1,995	3225 5-p Town Car 3,725	2779 5-p Coach 1,395				3625 5-p Brougham 2,575			
3750	4-p	Coupe	2,450	CLEVELAND "31"				3525 5-p Sedan 2,675				
3770	5-p	Brougham	2,450	2415 5-p Touring \$895	2900 5-p Sedan 1,595				3470 7-p Sedan 2,925			
3790	5-p	Sedan	2,595	2565 5-p Touring DeLuxe 1,025	"8-80"				KISSEL "55"			
AUBURN				2520 3-p Coupe 975	3700 5-p Sp. Touring 2,165				3130 2-p Speedster \$1,795			
"6-66"				2695 5-p Sedan 995	3800 3-p Coupe Roadster 2,315				2-p Sp'dster DeLuxe 2,085			
2850	4-p	Sport-Roadster	1,495	"43"				4-p Sp'dster DeLuxe 2,185				
2860	6-p	Touring	1,395	2775 5-p Touring 1,095	4050 5-p Sedan 2,265				2-p Enc. Speedster 2,085			
3020	5-p	Brougham	1,595	2950 5-p Sp. Touring 1,195	4000 5-p Brougham 2,365				4-p Enc. Spdstr. DeL. 2,635			
3070	5-p	Sedan	1,795	3000 5-p Coach 1,295	ESSEX				2-p Enc. Spdstr. DeL. 2,585			
3070	5-p	Wanderer	1,845	2890 3-p Coupe 1,175	2185 5-p Touring \$765				4-p Tourster 1,795			
"8-88"				3120 5-p Sedan 1,295	2895 5-p Coach 795				4-p Tourster DeL. 1,985			
3180	3-p	Sport Roadster	1,975	3190 5-p Sedan DeLuxe 1,595	FLINT				5-p Phaeton 1,585			
3200	6-p	Touring	1,995	3190 5-p Sport Sedan 1,625	3245 4-p Sport Roadster \$1,950				5-p Phaeton DeL. 1,785			
3380	5-p	Brougham	2,250	CUNNINGHAM				5-p Touring 1,595				
3450	5-p	Sedan	2,350	4600 7-p Touring \$7,000	3245 5-p Sp. Touring 2,050				5-p Enc. Speedster 2,185			
3450	5-p	Wanderer	2,400	4700 4-p Sp. Touring 6,500	3245 4-p Coupe 2,195				5-p Enc. Spdstr. DeL. 2,635			
3750	7-p	Sedan	2,550	5000 6-p Limousine 8,500	3595 5-p Sedan 2,285				5-p Sedan De Luxe 3,035			
BUICK				DAGMAR				3565 5-p Brougham 4d. 2,485				
"Standard"				"6-70"				2715 5-p Touring 1,185				
2845	2-p	Roadster	\$1,125	3750 4-p Roadster \$3,500	2940 5-p Sedan 4 d. 1,495				2-p Speedster 2,195			
2955	5-p	Touring	1,150	3800 4-p Sp. Tourer 3,500	2965 5-p Brougham 1,575				2-p Speedster De L. 2,485			
3020	2-p	Coupe	1,195	3700 4-p Phaeton 3,500	FORD				4-p Speedster 2,295			
3150	4-p	Coupe	1,275	4200 4-p Petite Coupe 4,500	Without Starter and Dem. Rims				4-p Speedster DeL. 2,585			
3230	5-p	4 d. Sedan	1,295	4200 4-p Petite Sedan 4,500	1526 2-p Runabout \$260				2-p Enc. Speedster 2,485			
3110	5-p	2 d. Sedan	1,195	4500 4-p De Luxe Coupe 4,750	1587 2-p With Balloon Tires 305				2-p Enc. Sp'd'r DeL. 2,935			
(120 in. W. B.)				4700 5-p Sedan 4,700	1607 5-p Touring 290				4-p Tourster 2,195			
3350	2-p	Roadster	1,250	4800 7-p Sedan 4,750	1640 5-p With Balloon Tires 335				4-p Enc. Speedster 2,585			
3515	5-p	Touring	1,295	"6-60"				4-p Enc. Sp'd'r DeL. 3,035				
3670	5-p	Sedan	1,495	3100 4-p Roadster 1,985	1645 2-p Runabout 345				4-p Tourster DeL. 2,385			
3765	5-p	2 d. Sedan	1,395	3200 4-p Sp. Touring 1,985	1655 2-p With Balloon Tires 370				5-p Phaeton 1,985			
(128 in. W. B.)				3150 5-p Touring 1,785	1728 5-p Touring 375				5-p Phaeton De Luxe 2,185			
3570	3-p	Sp. Roadster	1,495	3500 5-p Sedan 2,445	1738 5-p With Balloon Tires 400				7-p Touring De Luxe 2,085			
3635	5-p	Sp. Touring	1,525	DAVIS				4-p Coupe 2,485				
3855	4-p	Country Club	1,765	2650 4-p M. o'War Road. \$1,495	1860 2-p Coupe 520				4-p Coupe De Luxe 2,885			
3805	4-p	Coupe	1,795	2915 4-p Legionaire Tour. 1,495	1961 5-p Sedan, Tudor 580				4-p Brougham Sedan 2,395			
4025	5-p	Brougham Sedan	1,925	2750 5-p Phaeton 1,395	1972 5-p With Balloon Tires 605				5-p Broug. Sed. DeL. 2,985			
3940	7-p	Sedan	1,995	3070 5-p Sedan 1,595	1994 5-p Sedan, Fordor 660				5-p Brougham 2 d. 2,095			
GADILLAC				3065 5-p Imperial Sedan 1,795	2004 5-p With Balloon Tires 685				7-p Sedan De Luxe 3,485			
"314" Standard Line				3065 5-p Berline Sedan 1,795	FRANKLIN				7-p Berl. Sed. De L. 3,585			
(132 in. W. B.)				"91"				7-p Victoria 2,585				
4040	2-p	Coupe	\$3,045	2835 4-p Roadster 1,795	2800 3-p Sport Roadster \$2,750				7-p Victoria De Luxe 2,885			
4155	5-p	Sedan	3,195	3020 5-p Phaeton 1,695	2845 5-p Touring 2,635				LEXINGTON			
4240	7-p	Sedan	3,295	3245 5-p Sedan 1,895	2965 3-p Coupe 2,700				"Concord"			
4075	5-p	Brougham	2,995	3180 5-p Sedan 2,095	3175 5-p Sedan 3,090				2950 5-p Touring \$1,595			
4360	7-p	Imperial	3,435	3140 5-p Sedan de Luxe 2,095	3080 5-p Sport Sedan 3,225				3000 5-p Touring (Enc.) 1,695			
4115	4-p	Victoria	3,095	W. B.)				2950 5-p Spec. Touring 1,795				
Custom Built				3245 5-p Imperial Sedan 2,095	3275 7-p Limousine 3,275				3200 5-p Sedan 2,185			
(132 in.)				3215 5-p Berline Sedan 2,095	4185 5-p Oxford Sedan 3,172				3425 5-p Spec. Sedan 2,445			
3920	5-p	Roadster	\$2,250	DIANA "St. 8"				3120 2-p Roadster 2,140				
(138 in. W. B.)				2970 5-p Roadster \$1,895	3290 5-p Brougham \$1,595				3195 5-p Touring 2,095			
4300	7-p	Touring	\$2,250	3100 5-p Phaeton 1,895	3070 5-p Touring 1,895				3489 7-p Touring 2,195			
3960	5-p	Phaeton	\$2,250	3245 5-p Std. Sedan 2d. 1,995	3030 4-p Sport Roadster 1,595				3230 5-p Lark Touring 2,345			
4190	5-p	Coupe	4,000	3245 5-p DeLuxe Sedan 2,195	3210 4-p Cabriolet 1,845				3368 5-p Cal. Touring 2,495			
4190	5-p	Sedan	4,150	3180 5-p Cabriolet 2,095	3280 5-p Sta. Sedan 1,595				3395 7-p Cal. Touring 2,495			
4250	7-p	Suburban	4,285	3140 5-p Sedan de Luxe 2,095	3300 5-p DeLuxe Sedan 1,895				3375 7-p Royal Coach 2,495			
4355	7-p	Imperial	4,485	W. B.)				3440 5-p Brougham 2,595				
CASE				DODGE BROTHERS				3542 5-p Sedan 2,895				
J. I. C.				2473 2-p Roadster \$855	3290 5-p Brougham \$1,595				LINCOLN			
3260	3-p	Roadster	\$1,840	2593 2-p Special Roadster 955	3070 5-p Touring 1,895				4460 2-p Roadster \$4,000			
3290	5-p	Touring	1,885	2567 5-p Touring 875	3030 4-p Sport Roadster 1,595				4580 7-p Touring 4,000			
3470	5-p	Sp. Touring	2,160	2695 5-p Spec. Touring 975	3210 4-p Cabriolet 1,845				4680 7-p Phaeton 4,000			
3570	4-p	Sub. Coupe	2,480	2708 2-p Coupe "B" 960	3280 5-p Sta. Sedan 1,595				4740 5-p Sport Touring 4,500			
3640	5-p	Sedan	2,590	2823 2-p Spec. Coupe "B" 1,060	3300 5-p DeLuxe Sedan 1,895				4750 4-p Coupe 4,600			
3650	5-p	Brougham	2,590	2995 5-p "B" Sedan 1,045	GRAY				4885 4-p Sedan 4,800			
"Y"				3077 5-p Spec. "B" Sedan 1,145	1750 5-p Touring \$595				4960 5-p Sedan 4,900			
3950	7-p	Touring	2,225	3020 5-p Sedan A 1,195	1880 3-p Coupe 825				4890 7-p Sedan 5,100			
4320	7-p	Sedan	2,975	3107 5-p Spec. "A" Sedan 1,280	2020 5-p Sedan 845				4945 7-p Limousine 5,300			
CHANDLER "35"				2723 5-p Coach 1,035	2130 5-p Royal Sedan 975				LOCOMOBILE "48"			
3090	2-p	Roadster	\$1,695	2823 5-p Spec. Coach 1,135	HERTZ				5280 4-p Sportif Tour \$7,460			
3085	5-p	Sport Touring	1,495	DUESENBERG				5330 7-p Touring 7,460				
3223	7-p	Touring	1,595	Straight "8"				5630 5-p Victoria Sedan 10,050				
3309	5-p	Brougham	1,695	3920 2-p Roadster †	3290 5-p Touring \$1,225				5464 7-p Brougham 10,040			
3525	5-p	Met. Sedan	1,795	3970 4-p Roadster †	2800 5-p Sedan 1,285				5640 7-p Touring Lim. 9,500			
3498	5-p	20th Cent'y Sed.	1,490	3700 4-p Phaeton \$6,650	HUDSON				5868 7-p Enc. Drive Lim. 10,050			
3594	7-p	Sedan	1,895	3920 4-p Phaeton †	3400 7-p Phaeton \$1,250				5600 7-p Cabriolet 10,300			
CHEVROLET				3980 4-p Sp. Phaeton †	3385 5-p Coach 1,165				3100 2-p Roadster 2,150			
"Superior" (Series K)				4500 7-p Sedan †	3425 4-p Brougham 4 d. 1,450				3000 5-p Touring 1,795			
1780	2-p	Roadster	\$525	DU PONT				4-p Coupe 2,260				
1875	5-p	Touring	825	"D"				5-p Sedan 2,280				
2080	2-p	Utility Coupe	675	3300 2-p Roadster \$2,600	3375 5-p Touring 1,795				3350 5-p Brougham 2,280			
2130	5-p	Coach	695	3550 5-p Touring 2,600	3295 2-p Coupe 2,095				5-p Touring 5,500			
2215	5-p	Sedan	775	3800 7-p Touring 2,750	3410 5-p Sedan 2,195				5-p Roadster 5,900			
CHRYSLER "Four"				3550 5-p Touring Sedan 3,400	JEWETT				5-p Coupe 6,350			
(109 in. W. B.)				3060 4-p DeLuxe Road. \$1,500				5-p Sedan 7,300				
2300	5-p	Touring	\$895	3000 5-p DeLuxe Touring 1,320				5-p Sedan (divided) 7,450				
2405	2-p	Club Coupe	995	2990 5-p Coach 2d. 1,245				7-p Limousine 7,500				
				3160 5-p DeL. Coach 2d. 1,400				5-p Brougham 7,700				
				3325 5-p DeLuxe Sedan 1,680				7-p Cabriolet 7,800				

Prices and Weights of Current Passenger Car Models

SHIP.
WT. PASS. BODY STYLE. PRICE

McFARLAN "6"			
"SV"			
8700	2-p	Roadster	\$2,650
8700	2-p	Spec. Roadster	2,900
8600	5-p	Touring	2,650
8600	7-p	Touring	2,750
8550	4-p	Coupe	3,180
8550	5-p	Sedan	3,180
8550	5-p	Spec. Sedan	3,180
8550	7-p	Sedan	3,280
8550	5-p	Sub. Sedan	3,380
8550	7-p	Sub. Sedan	3,480
8550	5-p	Brougham 4 d.	3,180

"TV"			
4000	2-p	Roadster	5,400
4600	4-p	Sp. Touring	5,600
4900	4-p	Coupe	6,720
5200	4-p	Tour. Sedan	6,720
5200	7-p	Tour. Sedan	6,810
5200	6-p	Sedan	6,720
5200	7-p	Sedan	6,810
5200	7-p	Spec. Sedan	6,810
5200	7-p	Enc. Sedan	7,110
5200	7-p	Sub. Sedan	7,110
5200	7-p	Town Car	9,000

Straight "8"			
2-p	Roadster	2,650	
4-p	Roadster	2,900	
5-p	Touring	2,650	
7-p	Touring	2,750	
5-p	Sedan	3,180	
5-p	Sub. Sedan	3,380	
7-p	Sedan	3,280	
7-p	Sub. Sedan	3,480	
4-p	Coupe	3,180	
5-p	Coach Brougham	3,180	
5-p	Town Car	4,600	

MARMON "74"			
8695	2-p	Roadster	\$3,295
8604	5-p	Phaeton	3,295
8704	7-p	Touring	3,295
8799	5-p	Brougham Coupe	3,295
8869	4-p	Victoria Coupe	3,295
8869	2-p	Std. Coupe	3,295
8869	5-p	Sedan	3,295
8869	5-p	Sedan De Luxe	3,775
8999	7-p	Sedan	3,370
8974	7-p	Sedan De Luxe	3,850
8969	5-p	Sedan Limousine	3,900
8999	7-p	Sedan Limousine	3,975

MOON Series "A"			
2490	5-p	Roadster	\$1,395
2675	5-p	Cab. Roadster	1,595
2610	5-p	Touring	1,195
2750	5-p	Coach	1,895
2750	5-p	Del. Sedan 2 d	1,495
2850	5-p	Std. Sedan 4 d.	1,545
2850	5-p	DeLux Sedan 4d	1,695

London			
8270	5-p	Sp. Touring	1,985
8270	7-p	Touring	1,985
8590	5-p	Petite Sedan	2,540

NASH "Special"			
2870	2-p	Roadster	\$1,135
2980	5-p	Touring	1,115
8120	5-p	Sedan 2 d.	1,215
8300	5-p	Sedan 4 d.	1,445

"Advanced" (121 in. W. B.)			
8820	3-p	Roadster	1,375
8400	5-p	Touring	1,340
8550	5-p	Sedan 2 d.	1,425

"Advanced" (127 in. W. B.)			
8488	7-p	Touring	1,490
8640	4-p	Victoria	1,790
8750	5-p	Coupe 4 d.	1,990
8890	7-p	Sedan	2,090

OAKLAND "6"			
2425	2-p	Roadster	\$975
2500	5-p	Touring	1,025
2640	5-p	Coach	1,095
2615	3-p	Landau Coupe	1,125
2765	5-p	Sedan	1,195
2885	5-p	Landau Sedan	1,295

OLDSMOBILE "30"			
2285	5-p	Touring	\$875
2445	5-p	Sp. Touring	980
2460	5-p	Coach	950
2660	5-p	De Luxe Coach	1,040
2535	5-p	Sedan	1,025
2735	5-p	De Luxe Sedan	1,115

SHIP.
WT. PASS. BODY STYLE. PRICE

OVERLAND "91" 4			
(100 in. W. B.)			
1919	5-p	Touring	\$495
2060	2-p	Coupe	625
2205	5-p	Sedan De Luxe	695
2202	5-p	Std. Sedan 2 d.	595

"93" 6 (112 1/2 in. W. B.)			
2443	5-p	Sta. Sedan	895
2584	5-p	Sedan De Luxe	1,095

PACKARD "6" (126 in. W. B.)			
3643	4-p	Roadster	\$2,785
3653	5-p	Touring	2,585
3595	4-p	Sp. Touring	2,750
3753	4-p	Coupe	2,585
3937	5-p	Sedan	2,585

(133 in. W. B.)			
3793	7-p	Touring	2,785
4043	7-p	Sedan	2,785
4143	7-p	Club Sedan	2,725
4143	7-p	Sedan Limousine	2,885

"8" (136 in. W. B.)			
4060	4-p	Runabout	3,950
4090	5-p	Touring	3,750
4023	4-p	Sp. Touring	3,900
4242	4-p	Coupe	4,650
4528	5-p	Sedan	4,750
4528	2-p	Coupe	5,775

(143 in. W. B.)			
4199	7-p	Touring	3,950
4655	7-p	Club Sedan	4,890
4710	7-p	Sedan Limousine	5,100

PAIGE "21-24" (126 in. W. B.)			
3875	4-p	Phaeton	\$2,165
3935	7-p	Phaeton	2,165
4325	5-p	Sedan De Luxe	2,395
4325	7-p	Sedan De Luxe	2,840

PEERLESS "6-72" (126 in. W. B.)			
3175	5-p	Touring	\$1,895
3425	5-p	Coupe	2,295
3500	5-p	Sedan	2,895

(133 in. W. B.)			
3275	2-p	Roadster	2,195
3300	7-p	Touring	1,995
3700	7-p	Sedan	2,595
3825	7-p	Limousine	2,695

(116 in. W. B.)			
3310	5-p	Std. Sedan	\$1,595

"8-67" (136 in. W. B.)			
3950	4-p	Phaeton	2,845
3995	7-p	Phaeton	2,895
4300	5-p	Town Brougham	3,495
4310	5-p	Town Sedan	3,495
4400	5-p	Sub. Sedan	3,595
4525	7-p	Berline Lim.	3,795
4100	4-p	Victoria Coupe	3,245
4150	5-p	Sub. Coupe	3,295

PIERCE-ARROW "33" (126 in. W. B.)			
4350	2-p	Runabout	\$5,250
4500	4-p	Touring	5,250
4590	7-p	Touring	5,250
4730	3-p	Coupe	6,800
4800	4-p	Sedan	6,900
4960	7-p	Sedan	7,000
4750	4-p	Coupe Sedan	6,900
4730	6-p	Brougham	6,800
4850	7-p	Limousine	7,000
5060	7-p	Enclosed Lim.	7,000
4780	7-p	French Lim.	7,000
4730	6-p	Landaulet	7,000

"80" (126 in. W. B.)			
3205	2-p	Roadster	2,895
3260	4-p	Phaeton	3,095
3385	7-p	Phaeton	2,895
3430	5-p	Coach	3,150
3365	4-p	Coupe Landau	3,320
3335	4-p	Coupe	3,695
3440	5-p	Sedan	3,895
3560	7-p	Sedan	3,995
3615	7-p	Enc. Drive Lim.	4,045

REO "T-6" (126 in. W. B.)			
3350	2-p	Roadster	\$1,665
3132	5-p	Sp. Touring	1,395
3350	2-p	Coupe	1,495
3400	5-p	Sedan 4 d.	1,585
3400	5-p	Spec. Sedan	1,745

REVERE "25" (126 in. W. B.)			
3900	2-p	Sp. Roadster	\$2,750
3975	4-p	Speedster	2,750
4050	5-p	Touring	2,750
4300	5-p	Sedan	3,800

"M" (126 in. W. B.)			
3700	2-p	Roadster	3,200
3800	4-p	Sportster	3,200
3970	5-p	Touring	3,200
4400	5-p	Sedan	4,000

SHIP.
WT. PASS. BODY STYLE. PRICE

RICKENBACKER "Six" (117 in. W. B.)			
3-p	Roadster	\$1,595	
5-p	Phaeton	1,495	
3-p	Coupe Roadster	1,695	
3-p	De Luxe	1,820	
4-p	Coupe De Luxe	1,995	
5-p	Spec. Sedan	1,795	
5-p	De Luxe	1,920	
7-p	Sedan De Luxe	1,995	
5-p	Coach Brougham	1,595	
5-p	De Luxe	1,720	

"Eight" (121 1/2 in. W. B.)			
3-p	Roadster	1,995	
5-p	Phaeton	1,995	
3-p	Coupe Roadster	2,095	
3-p	De Luxe	2,220	
4-p	Coupe De Luxe	2,320	
5-p	Spec. Sedan	2,195	
5-p	De Luxe	2,320	
7-p	Sedan De Luxe	2,395	
5-p	Coach Brougham	1,995	
5-p	De Luxe	2,120	

ROAMER "6-50-55" (115 in. W. B.)			
2-p	Roadster	\$1,385	
5-p	Spec. Tourer	1,245	
2-p	Bus. Coupe	1,295	
5-p	Coupe	1,395	
5-p	Sedan DeLuxe	1,595	
"6-54-E" (118-138 in. W. B.)			
4-p	Roadster	2,385	
4-p	Tourer	1,985	
4-p	Sport	2,285	
7-p	Tourer	2,285	
3-p	Cabriolet	2,750	

"4-75-E" (128 in. W. B.) "Custom Built"			
2-p	Speedster	3,435	
3-p	Sport	3,285	
4-p	Tourer	2,985	
"8-88" (138 in. W. B.)			
4-p	Roadster	2,750	
5-p	Sport	2,750	
5-p	Tourer	2,395	
7-p	Tourer	2,585	
2-p	Speedster	2,985	
3-p	Cabriolet	2,950	
5-p	Spec. Sedan	3,285	
7-p	Sedan (138-in. W. B.)	3,185	
5-p	Brougham	2,785	

ROLLIN "G-2" (126 in. W. B.)			
2360	5-p	Touring	\$1,155
2405	5-p	Coupe Roadster	1,325
2595	5-p	Brougham	1,325
2575	5-p	Sedan	1,455

ROLLS-ROYCE "B-68" (127 in. W. B.)			
Chassis			††

††Manufacturers do not quote list prices.

STANLEY "252" (126 in. W. B.)			
3400	5-p	Phaeton	\$2,500
3800	5-p	Sedan	3,300

STAR "Standard 6" (126 in. W. B.)			
2-p	Roadster	\$525	
5-p	Touring	525	
2-p	Couper	595	
2-p	Coupe	675	
5-p	Coach	695	
5-p	Sedan 4 d.	775	
5-p	Standard "6"		
5-p	Couper	\$745	
5-p	Coupe	820	
5-p	Coach	880	

STEARNS-KNIGHT "B" (4) (126 in. W. B.)			
3775	4-p	Coupe Roadster	\$1,795
4250	5-p	Touring	1,595
3750	4-p	Coupe Brougham	1,895
3750	5-p	Brougham	2,095

"S" (6) (126 in. W. B.)

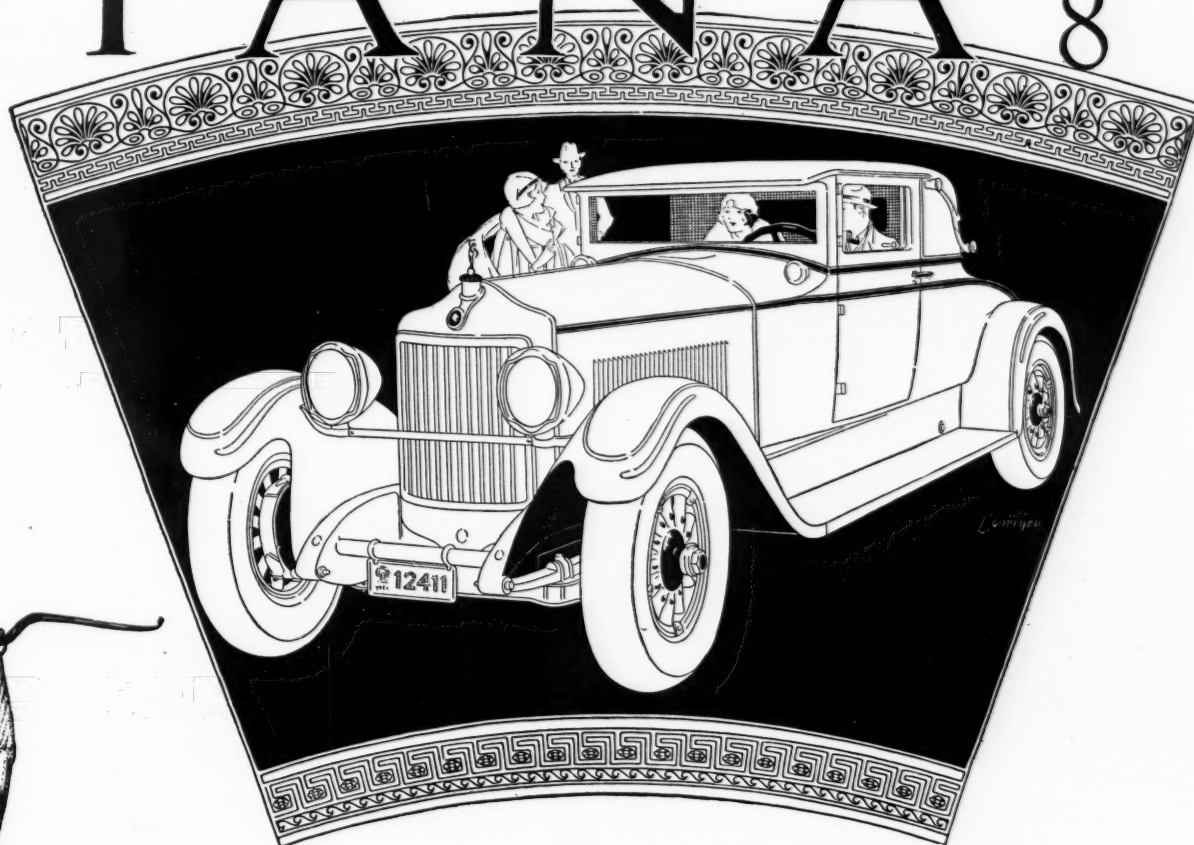
Mechanical Specifications of Current Passenger Car Models

This list comprises cars distributed on a national basis

MAKE AND MODEL			ENGINE										ELECTRICAL SYSTEM		REAR AXLE		BRAKES		STEERING GEAR—Make		REAR SPRINGS—Type and Length		CHASSIS LUBRICATION—Type and Make		ABBREVIATIONS—NAMES OF MFRS. OF STOCK PARTS						
Wheel Base (Inches)	Tire Size	Decimals-Balloons	Model and Number of Cyls.	Rated H.P.	N.A.C.C.	Valve Arrangement	Camshaft Drive	Crankcase In-ter, or Sep.	Platen Material	No. Main Bear.	Oiling System	Oil Cleaner?	Cooling System	Thermosist?	Carburetor	Air Cleaner?	Ignition System	Generator and Starter Make	Clutch—Type and Make	Gear Set—Make	Universal—Type and Make	Type and Make	Gear Ratio	Foot—Type and Location	Hand—Type and Location	4-Wheel Type	Optional	Steering Gear—Make	Length	Chassis Lubrification—Type and Make	Abbreviations—NAMES OF MFRS. OF STOCK PARTS
108	30x4.75	33x6.00	Own. 6-3x4 1/2	21.6	170	T	He. Int. C.I.	CI	CI	7	P.C.	N	Pu.	N	Car.	N	A-L.	P. Roc.	P. Roc.	f-The	4.77	Ross	550 1/2	E-T	M	Ross	Pr-Al	A-K	Atwater-Kent		
120	33x6.00	33x6.00	Own. 6-3x4 1/2	22.4	204	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	5.10	Ross	550 1/2	E-T	M	Ross	Pr-Al	A-L	Auto-Lite		
130	33x6.00	33x6.00	Own. 6-3x4 1/2	31.3	276	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.63	Ross	550 1/2	E-T	M	Ross	Pr-Al	Ad	Adams		
130	33x6.00	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
129	30x5.75	33x6.00	Own. 6-3x4 1/2	25.3	207	T	Ch. Sep. C.I.	CI	CI	4	P.C.	N	Pu.	N	Sch.	N	Remy	P. Roc.	P. Roc.	m-Spi.	4.90	Ross	550 1/2	E-T	M	Ross	Pr-Al	Al	Alameda		
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DIANA

The *LIGHT* STRAIGHT "8"



ASK ANY DIANA DEALER!

Q The DIANA franchise is the most sought after on "Motor Row." If you want to know why ask the men who sell DIANA.

Q These merchants will tell you frankly: "The automobile business is our bread and butter. We have implicit faith in the \$75,000,000 combination producing DIANA. We have faith in its ability to build a car that sells itself in a highly competitive market—and stays sold."

Q "Results have vindicated our judgement. DIANA is the easiest-to-sell fine car we've ever handled. It's a real money maker! We urge you to investigate the DIANA proposition. We believe you will follow our example."

Q There's some good territory still available—but it will pay you to act at once. Write, wire or 'phone.

Stewart Macdonald

PRESIDENT

Roadster \$1895 Phaeton \$1895 Standard Two-Door Sedan \$1895 Standard Four-Door Sedan \$1995 Cabriolet-Roadster \$2095 Two-Door Brougham De Luxe \$2095 Four-Door Sedan De Luxe \$2195 7 Passenger Sedan De Luxe \$2685 F. O. B. St. Louis

Built by the MOON MOTOR CAR COMPANY, St. Louis

Mechanical Specifications of Current Passenger Car Models—Continued

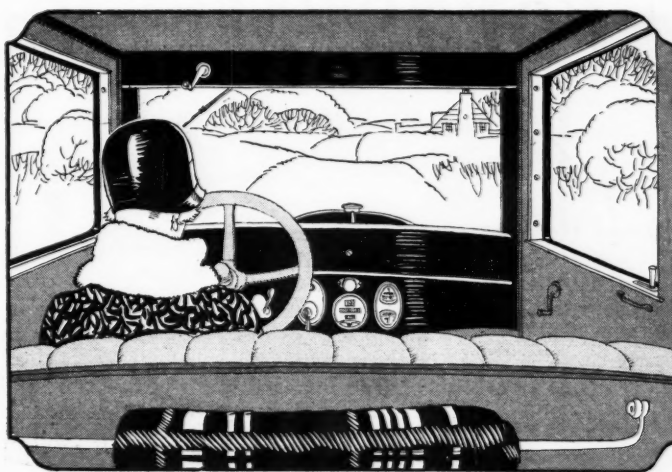
(This list comprises cars distributed on a national basis)

from page 46

(This list comprises cars distributed on a national basis)

[illegible]

features that sell
the new Chevrolet



Chevrolet offers a score of advantages for winter driving obtainable elsewhere only at much greater cost. These features are a great asset to Chevrolet dealers in maintaining good fall and winter business.

CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN
Division of General Motors Corporation

for Economical Transportation



QUALITY AT LOW COST

Wis—Wisconsin
Za—Zerk
Zen—Zenith

Sleeve valve
Y—Yes

Rectifier
S—Semi-elliptic
Sep—Separate

Single plate
Pr—Pressure gun
Oil cups

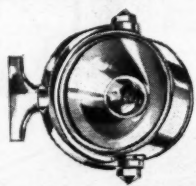
Internal rear wheels
I-R—Internal rear wheels
J—Three-quarter elliptic
K—Cone

External transmission
E-T—External transmission
F—Full floating

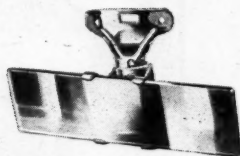
Semi-steel
B-P—Both internal and
Chain

Car Dealer Averages Sales of Accessories on Each Car Sold

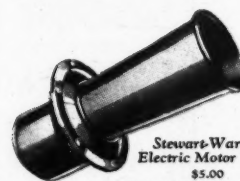
Fords \$41⁰⁰ other Cars \$75⁰⁰



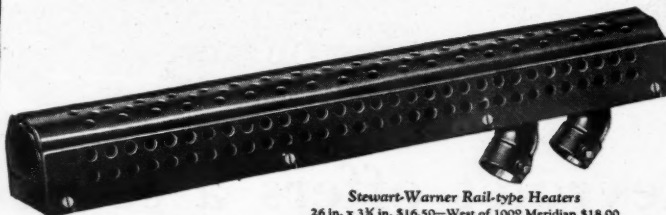
Stewart-Warner
Miniature Spotlights
Prices range from
\$9.00 to \$12.50



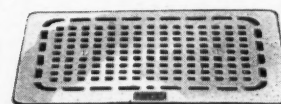
Stewart-Warner
Rear Vision Mirror
For Open or Closed Cars, \$2.00



Stewart-Warner
Electric Motor Horn
\$5.00
West of 100° Meridian \$5.25



Stewart-Warner Rail-type Heaters
26 in. x 3 1/4 in. \$16.50—West of 100° Meridian \$18.00
21 in. x 3 1/4 in. \$16.00—West of 100° Meridian \$17.50
Ford Type—21 in. x 3 1/4 in. \$15.00
West of 100° Meridian \$16.50



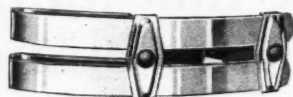
Stewart-Warner Floor Heater
Two Sizes—\$20.00 to \$22.00
West of 100° Meridian \$21.50 to \$23.50



Stewart-Warner
Shock Absorbers
Per Pair \$15.00
West of 100° Meridian
\$15.50
Pair for Fords, \$13.50
One Front and One Rear
West of 100° Meridian
\$14.00



Stewart-Warner Spotlight
For Open or Closed Cars, \$4.25



Stewart Fender Guards
Black Enameled bars, per pair, \$23.00
West of 100° Meridian \$26.00
Nickel Plated bars, per pair, \$25.00
West of 100° Meridian \$28.00



Stewart-
Warner
Electric
Windshield
Cleaner
Complete, \$8.50
West of 100° Meridian
\$8.75



Stewart-Warner
Speedometer—
Special Model for
Fords
Colored dial tell
when to lubricate
Complete \$15.00
West of 100° Meridian
\$15.50



Stewart-Warner Double Bar Bumpers
Nickel Plated and Black Enameled—Prices range from \$16.00 to \$25.00
West of 100° Meridian \$18.50 to \$28.00



Stewart-Warner Triple Bar Bumpers
Nickel Plated or Black Enameled—Prices range from \$22.50 to \$37.50
West of 100° Meridian \$25.50 to \$40.50

RESOLVE— to make this Profit on Stewart-Warner Accessories *During 1926*



UDGE GARY says, "We are approaching a big wave of prosperity." Other big business men express themselves in the same tone. This is a good tip for every man in business to put his house in order and get ready to ride in on the wave.

Worthy products, during 1925, enjoyed a record year. This was the lead up to the prosperity wave that is coming. Dealers who pulled down good profits during 1925 should not rest on their oars. "Good enough" won't do. Keep pulling! Dealers who stood still or did not do "so very well" in 1925 should find out "WHY" and clean house or right-about-face and get in line.

Selling Stewart-Warner Accessories is one way "to get in line." Here are ELEVEN essentials that every car owner should have and average from \$41 to \$75 per car. Multiply this by the number of cars you sell and figure your profit.

The more fully equipped cars, of the make you sell, seen upon the streets of your community, the greater interest will be aroused in your product. One of the car dealers handling Stewart-Warner

Accessories writes, "We have received a great amount of advertising publicity from the people of Cedar Rapids, commenting on the number of new cars on the streets equipped with Stewart-Warner Products." This dealer sold 80 sets of Stewart-Warner Bumpers in ONE MONTH alone in 1925 and averaged \$41 a car on Stewart-Warner Accessories in another month.

No one dealer has a monopoly on this business. Every dealer who sells 5, 50 or 1000 cars a year can have this business.

The Stewart-Warner System of Distribution—with 62 centrally located Service Stations in United States and Canada—and 34 in foreign lands—keeps the dealer supplied as he needs stock—making it unnecessary for the dealer to burden himself with a large inventory.

A small initial investment in the Stewart-Warner Complete line of Accessories will turn over many times and show a handsome profit.

Now is the time to make this resolve. Get set for 1926!

STEWART-WARNER SPEEDOMETER CORPORATION
CHICAGO - U. S. A.

Stewart-Warner Accessories

TWELVE MILLION PEOPLE ARE TODAY USING STEWART-WARNER PRODUCTS

Two continents say "Goodbye, buggy wheels ...here's Budd-Michelin"

More than half of Europe's cars ride on Budd-Michelin wheels...
In America, Budd-Michelin carries more motor vehicles than
all other steel wheels combined...



And thereby hangs a tale



WHEN BEN HUR won the Roman Derby the wood-spoked wheel was already so old nobody thought about it anymore...

Two thousand years later people were still trying to equal Ben Hur's speed on the highways—and still traveling on wood-spoked wheels...

Then came the revolution in highway travel. Speed jumped from six miles an hour to sixty. The weight of vehicles was multiplied. New problems of braking and steering were encountered...

The wood-spoked wheel had been adequate since the beginning of time, because horse-speed represented the maximum in highway travel...

But automobile-speed—automobile-weight—automobile-braking and steering—these are another story...

Goodbye, buggy wheels!

A great engineer quit thinking in terms of wood-spoked wheels and designed a wheel for the automobile...

He selected the material that makes possible the rest of the car—steel...

He developed a new *convex* form that permits the placing of brakes and king-pins *within* the wheel, for more positive braking and easier steering... for better protection of brakes from mud and water...

He made his wheel *demountable* for quick adjustment of brakes and quick changing of tires...

He provided a *fifth* wheel, to dress up the rear of the car and carry the spare tire...

He gave his wheel strength to withstand collisions... beauty that adds beauty to any car...

Europe saw this wheel first, and was quick to adopt it. Now it is sweeping America...

Two continents say, "Goodbye, buggy wheels. Here's Budd-Michelin!"



BUDD

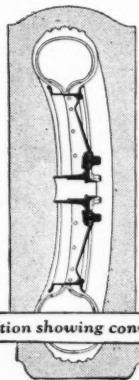
WHEEL COMPANY

Detroit

Philadelphia

BUDD-MICHELIN—the All-Steel Wheel
gives you these advantages:

—a scientific convex form, increasing resilience, and permitting the placing of brakes and king-pins *within* the wheel, for better braking and easier steering—for greater protection of brakes from mud and water



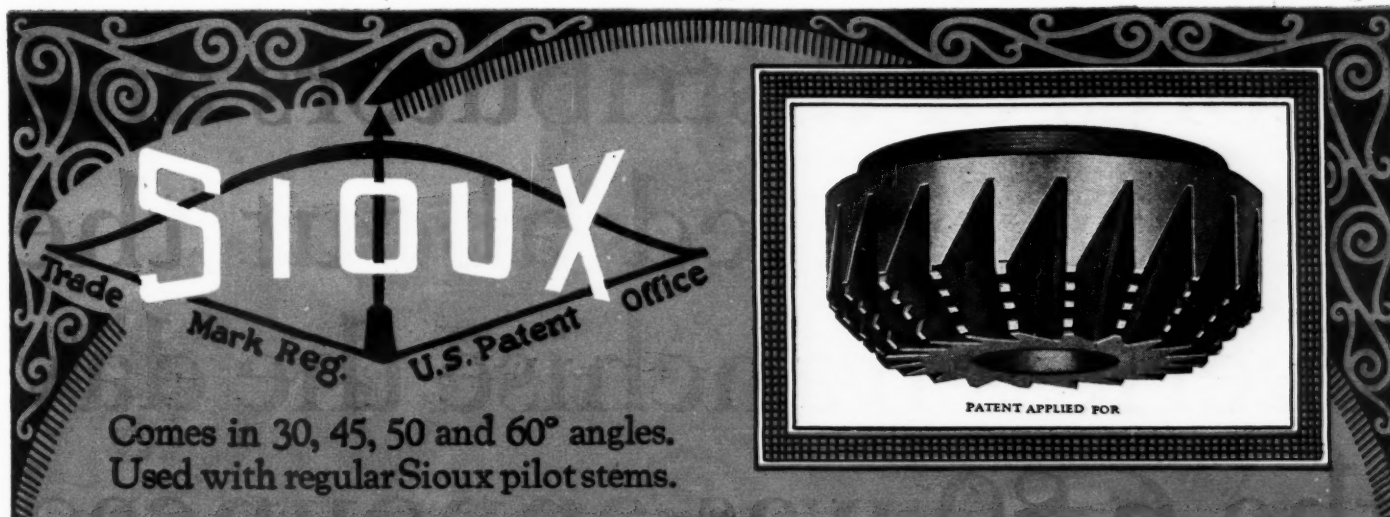
Cross-section showing convex design

—a demountable wheel which hides the brakes but gives immediate access to them when adjustments are needed

—a light wheel (lighter than wood) tapering toward the rim, making starting and stopping easier

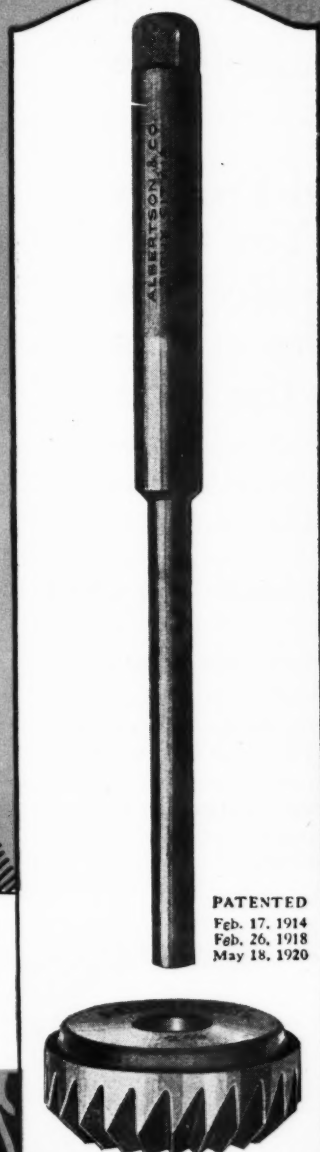
—five wheels to a set. An extra wheel to dress up the rear of the car, easy to substitute in case of tire trouble. No rims to remove

—everlasting strength, promoting safety. Triumphant beauty!



Comes in 30, 45, 50 and 60° angles.
Used with regular Sioux pilot stems.

SIOUX ROUGHING REAMER



PATENTED
Feb. 17, 1914
Feb. 26, 1918
May 18, 1920

removes hard, crystallized carbon deposits with just a few turns. Note, in the illustration above, the tough sharp "teeth", so arranged that one cut overlaps the other, thus leaving no ridges. After the crystallized surface is entirely removed, finish up with regular Sioux Valve Seat Reamer.

Use a Sioux Valve Seat Reamer for reaming out pits, carbon deposits and other irregularities from the valve seats before lapping in the valves. A few turns cuts a smooth clean face at the proper angle—thus saving hours of work on valve grinding jobs and making it easy to get a good compression-tight job.

Made in all sizes—in any degree—30°, 45°, 50°, 60°, and 15° and 75° for narrowing valve seats.

Sioux Pilot Stems are accurately ground to fit perfectly. T Handle Extension Wrenches used in connection with Sioux Pilot Stems only. Sizes, 3 inch, 6 inch and 12 inch.

Please Note! Sioux Reamers are made to have plenty of cutting clearance, thus insuring long usefulness without resharping. If reamer chatters, due to its cutting clearance, insert a piece of Kraft or wrapping paper on pilot stem between reamer and valve seat. This is only necessary when reamers are sharp.

YOUR JOBBER SELLS THEM

SIOUX VALVE SEAT REAMER AND PILOT STEM

ALBERTSON & CO.,
Sioux City, Iowa



Scores of distributors and dealers wired about the Peerless franchise the day the 6-80 was announced

NEVER before has a Peerless announcement created such keen interest in the trade. The minute the word was out, telegrams started pouring in.

The Peerless 6-80 Sedan at \$1595! A real Peerless at the lowest price Peerless has ever had! You don't have to be told how that multiplies the Peerless market. You can imagine what a Peerless at this astonishingly low price means in profits to the Peerless selling organization in the field.

Specifications for the 6-80

Wheel Base—116 inches

Engine—PEERLESS 6 Cylinder, $3\frac{1}{4}$ " Bore x $4\frac{5}{8}$ " Stroke—Displacement 230 cu. in. 42 miles per hour in second, upward of 70 miles per hour in third gear.

Crankshaft—7-Bearing— $2\frac{3}{8}$ " main bearings, $2\frac{1}{8}$ " Crank Pins.

Lanchester Dampener on front end of shaft—eliminating vibration.

Peerless Lockheed Hydraulic four-wheel brakes—14" x 2".

Steering—cam and lever—very easy steering—car turns within a 40-foot circle.

A full line of bodies—Standard—Sedan—Close Coupled Sport Sedan—Two-door Coach—Business Man's Coupe with one wide seat—Sport Roadster and Sport Phaeton—all Lacquer finished—Mohair Plush upholstery in closed cars—Spanish Leather on open cars.

PEER



\$1595

F. O. B. FACTORY

A Complete Line—Three Price Ranges!

PEEERLESS—with a past that has made automobile history—offers high powered sales organizations a future that is truly enviable in the automobile business.

Peerless has always been a good car. And Peerless always will be a good car. But never has the Peerless line been so complete.

*The Equipoised V-type
Eight \$2845 to \$3795
The Powerful 6-72 · 1895 to 2695
The Remarkable 6-80 1595
all f. o. b. factory*

Now, all the world are Peerless prospects. There's a model to suit most every man's idea of price and value. And that means big sales and steady profits to Peerless dealers and distributors.

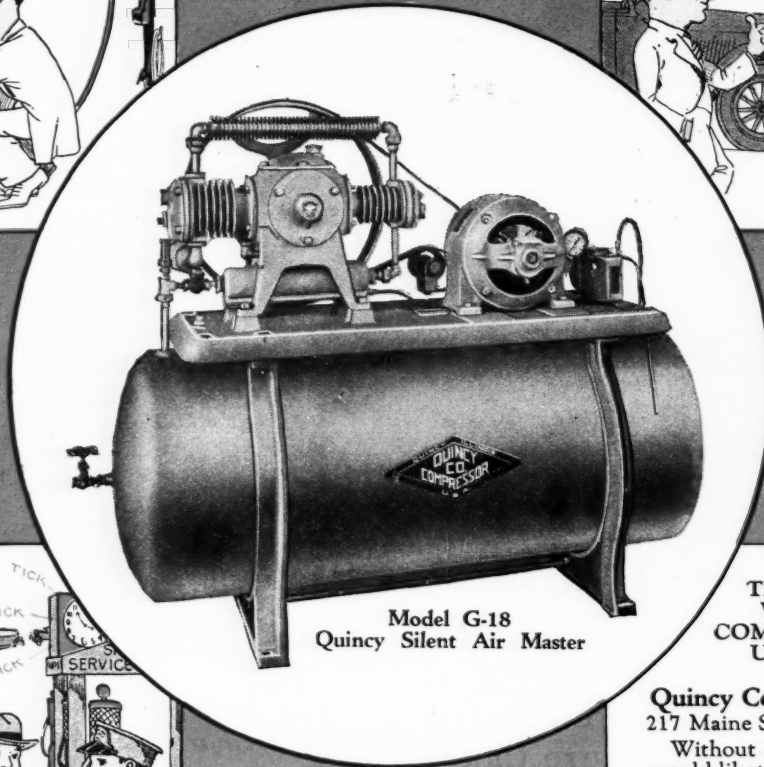
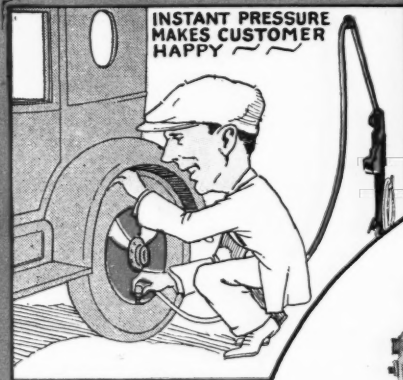
If Peerless is not represented in your locality, wire, write or phone.

THE PEERLESS MOTOR CAR COMPANY, CLEVELAND, OHIO

Peerless has ALWAYS been a good car

PEERLESS

Build Your Business With a Silent Air Master



Model G-18
Quincy Silent Air Master



THIS COUPON
WILL BRING
COMPLETE DETAILS
USE IT—NOW!

Quincy Compressor Co.,
217 Maine St., Quincy, Ill.

Without being obligated I
would like to know how a Quincy
Compressor can boost my sales
and profits.

Name _____
Address _____
City _____ State _____

Gone is the old idea that the kind of air service rendered doesn't matter. The biggest station operators in the country realize that instant air pressure, which enables the motorist to inflate his tires in a jiffy helps a mighty lot to hold his trade. And a big majority of these operators are installing Quincy Compressors.

Just as there is but one champion in every field of sport—one leader in every line of endeavor; so there

is but one line of Quincy Compressors. If the Quincy standard of quality and service is ever reached, Quincy will no longer be building to that standard. We will have moved up another notch.

Will you take a second or two to find out why Quincy Compressors are so popular and profitable? The coupon will bring complete information. Clip it out now.

QUINCY COMPRESSOR CO., Quincy, Illinois
Formerly Wall Pump and Compressor Co.

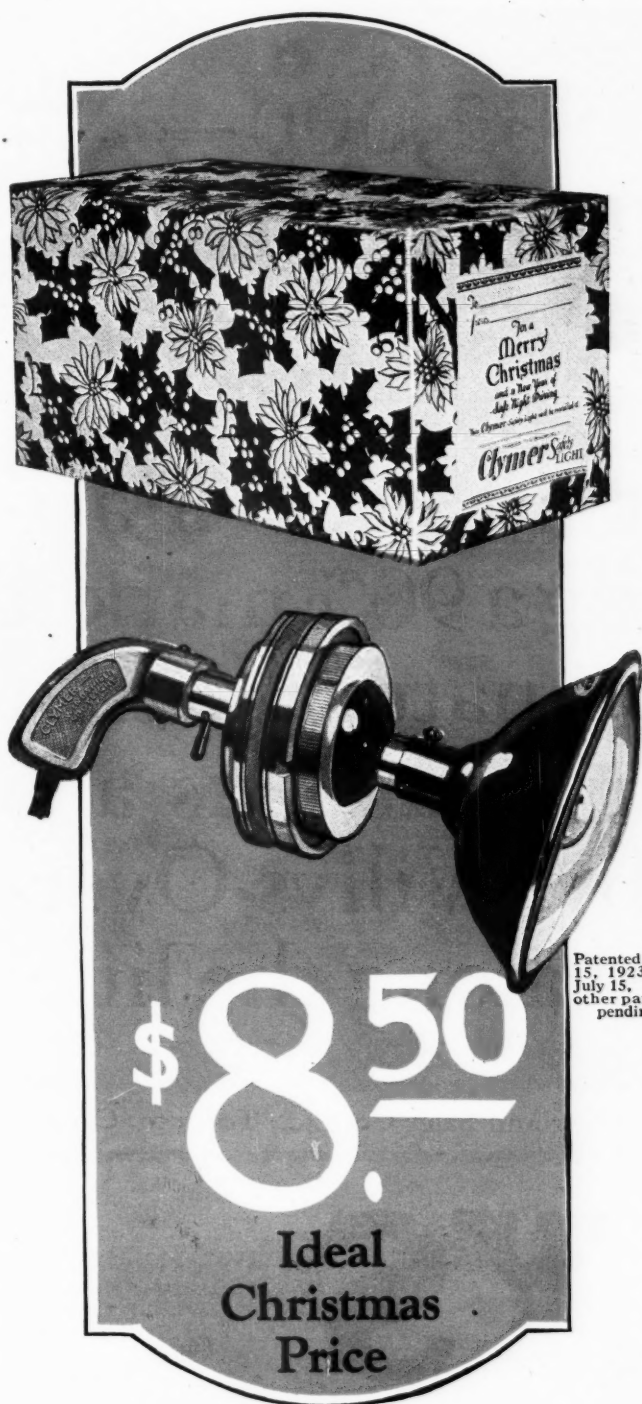
J485

QUINCY COMPRESSOR CO.

Quincy



Illinois



Patented May 15, 1923 and July 15, 1924; other patents pending.

For Christmas Profits

NO product in the entire accessory field makes a better Christmas gift—or is easier to sell at \$8.50—than the Clymer Safety Light.

The Clymer is extremely stylish, extremely popular, extremely useful, extremely good looking. Every car owner wants one. Every gift seeker is a prospective purchaser of one at your accessory counter. The price is easily within the reach of all.

Be sure you have a supply of Clymers packed in the special Christmas container. Your jobber has them. Order from him today. Would you like a Christmas window poster advertising the Clymer? Christmas folders? A Christmas newspaper electro? Ask your jobber for them, or write to our Advertising Department.

The Clymer Safety Light complies with State Laws.

CLYMER MFG. CO., Rockford, Ill.

Through the windshield where the spotlight belongs

Clymer Safety LIGHT

From \$3000 to \$32,000—Net worth increased more than 10 times in three years. This is the record of one of five Toledo dealers. A first-class product, at a lower-than-market price, giving a 90% market coverage. It follows naturally that success stories such as this are being registered by Willys-Overland merchants all along the line.

Willys-Overland, Inc., Toledo, Ohio - Willys-Overland Sales Co. Ltd., Toronto, Canada

WILLYS OVERLAND

Write Toledo
for Dealer
Franchise
details.

OVERLAND EAST TOLEDO SALES CO.
624-626 MAIN STREET
Toledo, Ohio

Willys-Overland, Inc.,
Toledo, Ohio.
Gentlemen:

November 23, 1925.

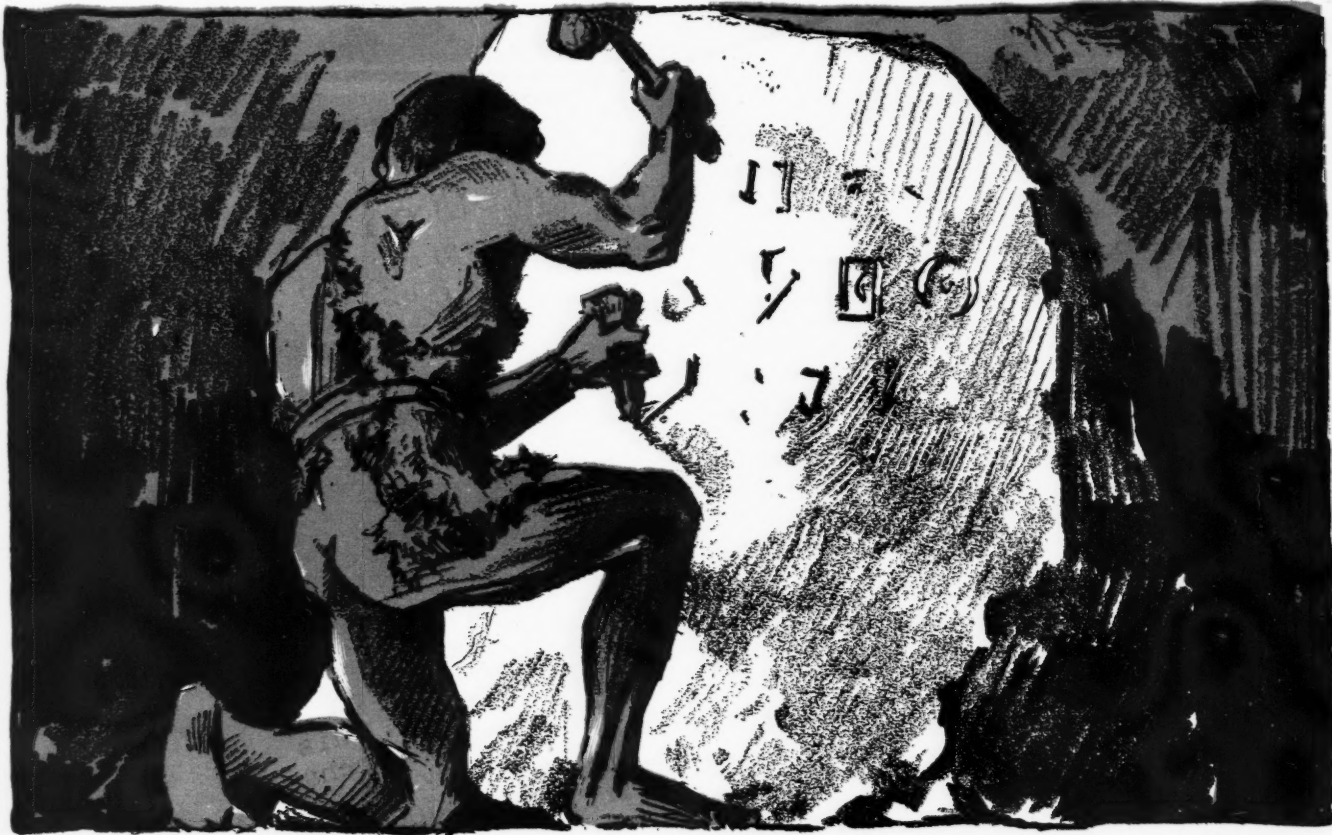
I am enclosing a true statement of our business as of November 1, 1925. This is correct as to amount of cash and merchandise and is taken from our inventory of November 1. It does not include \$5300 that we have in a separate savings account which is also a part of our earnings. Neither does it include my real estate that showed on my statement of last year.

Having only \$3000 at the time I took this business over alone I feel that we have done fairly well to build it up to a net worth of \$32,000 within 3 years. It has been a genuine pleasure to sell such fine merchandise as the Overland and Willys-Knight cars and I want to thank your various departments for the highly satisfactory way in which they have co-operated with us at all times.

(Signed) Jake O'Rourke,
Manager,
Overland East Toledo Sales Co.

Toronto, Canada

Fine Motor Cars



The Policy

THE policy of a house is a great deal like its front. It doesn't mean anything until after you have grown acquainted with what's inside. The general idea at Cupples has been to reduce to its essentials a policy of distribution that offers the maximum degree of interest to the aggressive dealer. ♡ Boiled down—that means there's extra profit in Cupples Tires and Tubes—and the permanent business-building opportunity that has dependable quality as its starting point. The long duration of Cupples dealer connections is the best endorsement of the soundness of the Cupples Dealer Policy. ♡ Cupples principles, tried out through three-quarters of a century, offer the same degree of satisfaction to the responsible tire dealer that they gave the responsible merchant of 75 years ago. ♡ We want the most aggressive dealer in your town. ♡ Write us.
CUPPLES COMPANY, . . SAINT LOUIS
A National Institution Since 1851



Cupples

TIRES TUBES



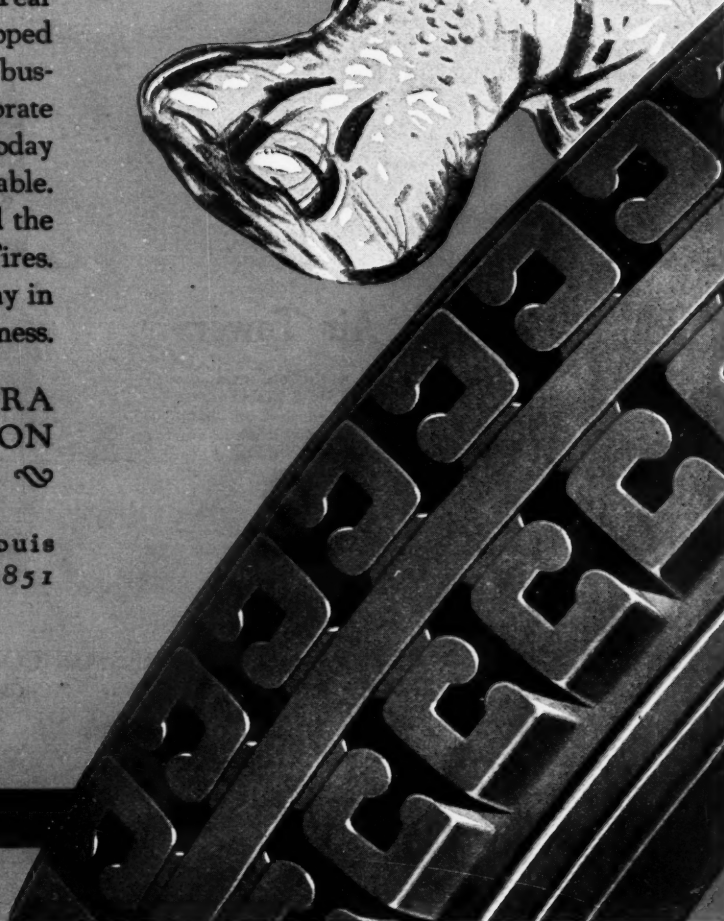


"Tough as a Rhino"

AN untiring spirit of progress, and the substantial support of an old established institution are two vital things every Cupples Dealer enjoys. In preparing for the celebration of its Diamond Jubilee Year in 1926, Cupples Company has developed a new Extra Heavy Cord for trucks and buses, and a new Balloon Cord that incorporate the principles of construction that are today indicated as those that are most desirable. Cupples National Advertising will tell the story of these Diamond Jubilee Tires. Line up with the Cupples Plan today in preparation for next Spring's business.

OVER-SIZE CORDS ~ EXTRA
HEAVY CORDS ~ BALLOON
CORDS ~ INNER TUBES ~

CUPPLES COMPANY, Saint Louis
A National Institution Since 1851





You Don't Have To Shut Off a U. S. To Use The Telephone

You can talk long distance with a U. S. Air Compressor running and still hear the party at the other end of the wire. That's how **smoothly** it operates—how **silent** it is, due to the per-

fect construction and adjustment of all moving parts.

Which Compressor are you going to purchase—a noisy one or the quiet U. S.?

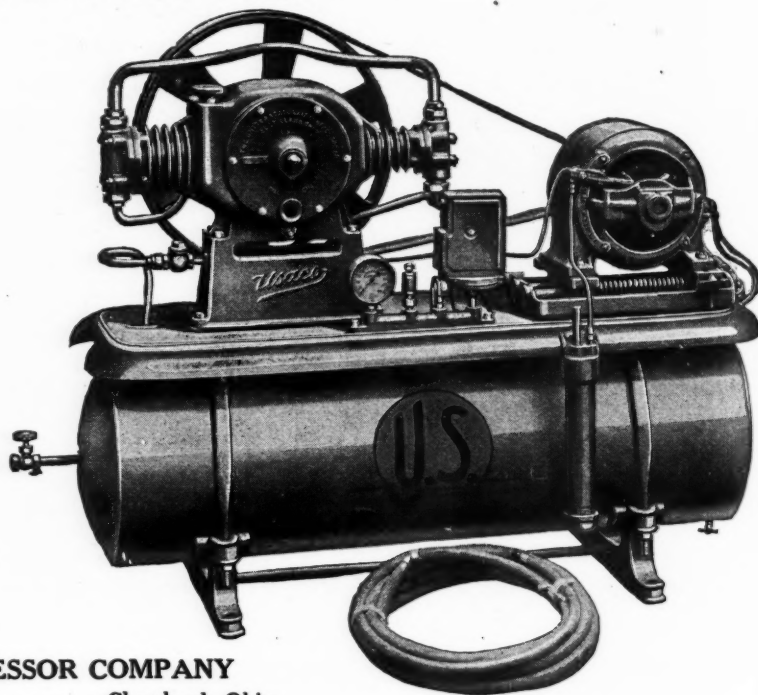
LISTEN

You Can't Hear It!

Operates with the Quiet
Smoothness of an
Electric Motor

U. S. Air Towers

Designed upon the old principle of Teeter-Totter, U. S. Towers are so perfectly balanced that one hand holds the hose arm down while you loosen the valve cap with the other. The hose arm comes down easily and goes back gradually — IT NEVER SLAPS BACK. Thus there is no strain on either hose or tower and no possibility of injury to the user or his car.



THE U. S. AIR COMPRESSOR COMPANY
5304 Harvard Ave. Cleveland, Ohio

U.S. Air Compressors

Usaco
TRADE MARK



The busiest place in town these days—

The service station that installs Perfection Heaters

PROPRIETORS of Perfection Service Stations have forgotten there ever was such a thing as a *dull* winter season. They're busy as bees these days—and happy as larks, because the Perfection Heater business is going great guns.

Everyone that drives wants the year 'round comfort that Perfection Heaters give. They've learned

about it from their friends and through the big national advertising campaign. And car dealers are constantly sending cars in to have them equipped with Perfection Heaters, because their customers demand it.

**New Ford \$650
Heater . . .**

The new Perfection Heater for all Fords is proving a fast seller and a real profit maker.

It's the kind of steady, big-paying winter business you want. And it's not too late to get a nice big share of it this winter.

THE PERFECTION HEATER & MFG. CO., Cleveland, Ohio

Makers also of that sensational development in carburetion, the Swan System; through its subsidiary The Swan Carburetor Company.

PERFECTION MOTOR CAR HEATERS

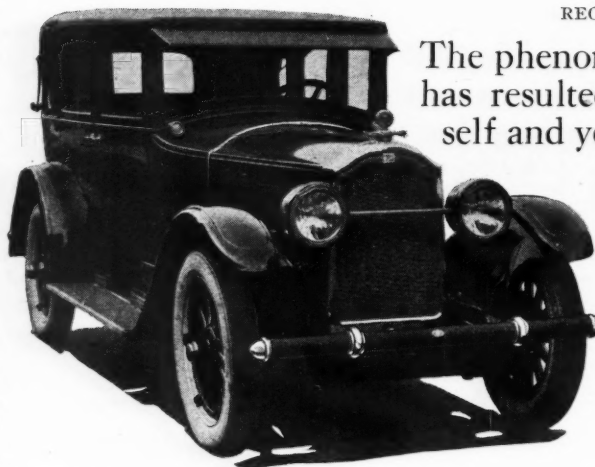
WARNING

There is Only

ONE

BALLOON BUMPER

REG. U. S. PAT. OFF.



The phenomenal success of Balloon Bumpers has resulted in imitations. Protect yourself and your customers by selling only genuine Balloon Bumpers. The above registered trademark is your guide

Beauty Plus Protection

Dress up your cars with the distinctive Balloon Bumper. Balloon Bumpers harmonize with 1926 automobile designs. They enhance beauty and help car sales

Approved by Insurance Underwriters

The Only and Original Balloon Bumper

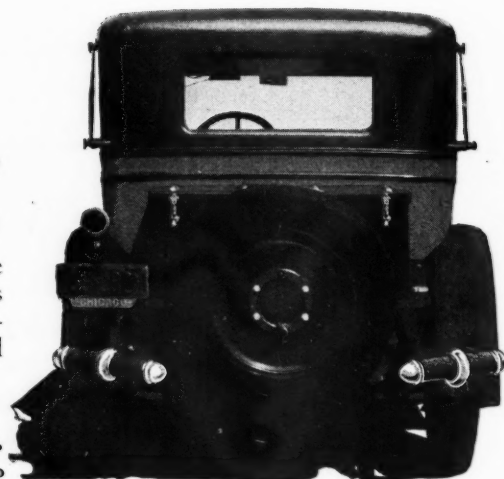
Full Front or Rear Bumper, \$25

Balloonettes for the Rear, \$30

Car Dealers

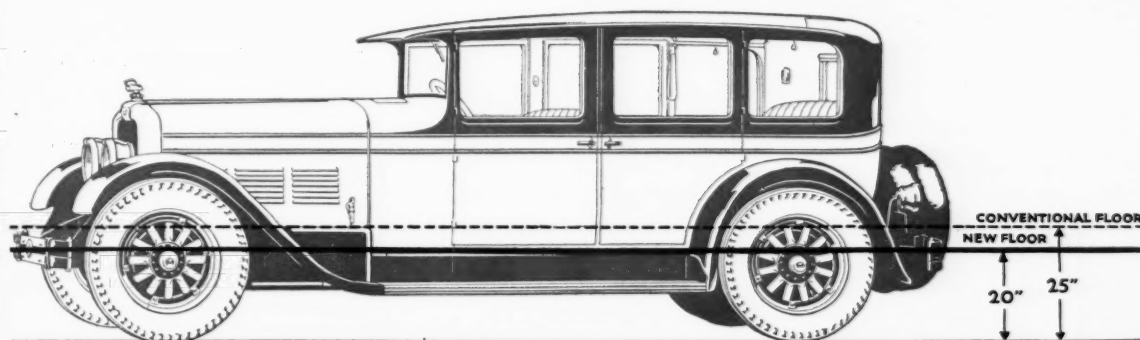
Write for exclusive sales and extra-profits contract. Special proposition to those who reply to and mention this advertisement

Automobile Equipment Mfg. Corp.
1908-10-12 Indiana Avenue Chicago



25

An automobile with the body five inches nearer the ground than in any existing model, yet maintaining ample road clearance and head room !



* **I**N the new car, the center of gravity has been materially lowered, and a strikingly distinctive appearance gained by a chassis design that drops the body a full five inches nearer the ground.

This is accomplished while maintaining ample road clearance, and providing generous headroom inside the body.

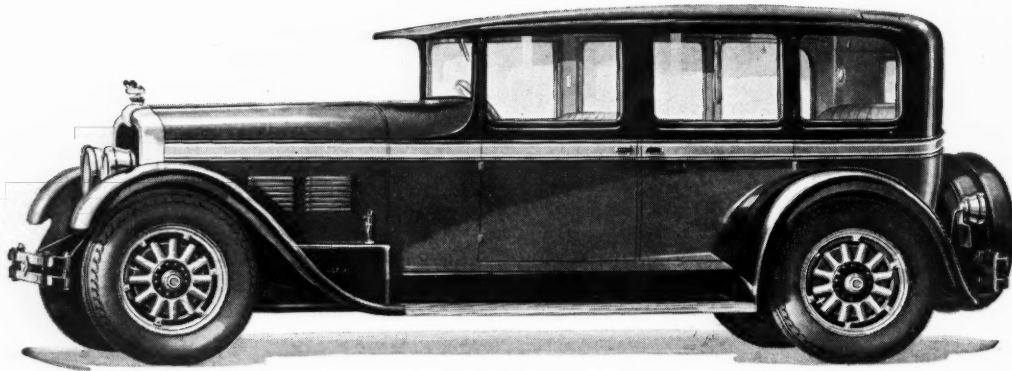
A five-inch lower center of gravity means an almost incredible increase in driving- and riding-comfort, the elimination of risk in taking turns, and an all around advance in safety and roadability.

As the floor is only twelve inches above the usual curb, the car is entered gracefully and easily, instead of being climbed into.

The next advertisement of the new car, appearing in the following issue of this publication, will explain the advanced engineering that makes possible the radically lowered center of gravity.

* These facts have been verified by the
technical experts of this publication

see next page



THE new car immediately registers a striking distinctiveness of appearance, because of its five-inch-lesser height. And, instead of a mere illusion of lowness, secured by the expedient of letting down the roof alone, here is legitimate and actual lowness, achieved by the lowering of the entire body.

The car gives an effect perhaps best described as one of "smart elegance". Its proportions are impressively beautiful—low, graceful. The close-to-the-road body, together with an amply extended wheel-base, adds safety, stability, and ease of riding and handling to its unmistakably aristocratic appearance.

A statement by America's leading designer of custom-made bodies for the highest class domestic and foreign chasses:

"In an international experience extending from the inception of the automobile, I never before have had presented such an opportunity for legitimately 'hanging a car on the ground'.

"The chassis construction of the new car has permitted us to approach very closely to the ideal in motor car proportions. The result is a car of very distinctive appearance, yet free from any suggestion of freakishness, whose lines and contour are exceedingly smart and, by their directness, suggestive of smooth, straightforward speed.

"No sacrifice of either legroom or headroom is made; on the other hand, the low center of gravity must greatly add to the comfort and safety of the passengers."

[This statement will reappear in the December 31st issue of this publication, over the signature of the writer.]

A word to dealers by the manufacturer:

FOR trade reasons, the name of the new car cannot yet be divulged, and for similar reasons all signatures are omitted from this advertisement. However, you are assured by the publisher of this paper that the company behind these statements is a thoroughly sound and fully experienced one. The car will be sold at a competitive price.

Dealers who are interested by these advance announcements are invited to write for fuller details, addressing "Manufacturer New Car, care of Motor Age, 5 So. Wabash Ave., Chicago."

Such communication will in no way commit or obligate the inquirer. All dealers now representing this manufacturer have been advised of the forthcoming new car.

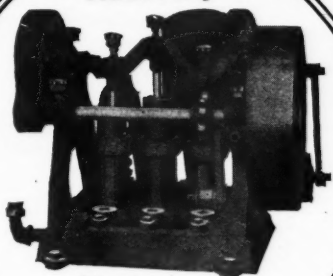
see preceding page

TOOK IN \$312.00 FIRST WEEK

Mr. A. R. Painter, Wyandotte, Mich.,
writes:

"The first week I had my Hardie Magic Car Washer I took in \$312.00. Before I bought your outfit, with two men I was turning out 12 cars a day. Now with the same men I am turning out 250 to 300 cars a week. There are always more cars than I can handle. I do a clean job quick and customers come back to me for another wash."

The Famous
Hardie Pump



The Result of
25 Years'
Experience

300 LBS. PRESSURE

is the basis of Hardie Magic success. Compare this pressure with the 40 lbs. of average city water mains and you see why the Magic does a clean job quick. That's the difference between big profit and little profit or actual loss

High-Pressure Car-Washing *Is Now The Big*

Money Maker

The man who washes cars the quickest and cleanest is the man who gets the business, and when he gets four times the work from the same amount of labor he makes that much more profit. That's exactly the opportunity presented the owner of the

HARDIE MAGIC Car Washer

It insures repeat business, for it does the work almost "while you wait," and yet is absolutely safe for the finish. The stream from the gun or guns can be changed instantly from a strong drive that dislodges grease and dirt to a soft, delicate spray which cannot injure the most mirror-like finish.

Note these following features. Then write for complete information, giving us full details of your floor space, number of cars washed, number of men working, etc., so that we can prescribe for your exact needs.

Occupies one-fifth the space of compressed air outfits.

Requires no re-designing of wash floor.

Will fit in a corner or can be hung from above

Multiplies the washing capacity many fold.

Can be handled safely by inexperienced men.

Double the capacity of other outfits.

Handles hot water, soap solution or any material used for car washing.

Regulator takes all load off motor when guns are shut off.

Cheapest to install.

Increased profit on every washing job.

Quick work draws big volume of business.

Motorists attracted to garage who produce other profitable sales.

Made in one, two, four, six and eight-gun sizes.

For Sale By Large Automotive Jobbers Everywhere

Manufactured by

**THE HARDIE
MFG. CO.**

HUDSON - MICHIGAN

Canadian Branch: PETROLIA, ONTARIO

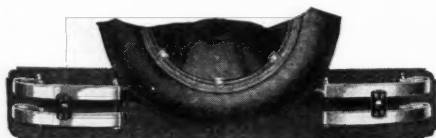
Western Factory: PORTLAND, OREGON

Other Branches: Kansas City, Mo., Los Angeles, Cal., Brockport, N. Y., Hagerstown, Md., Tampa, Fla., Macon, Ga.





Gemco Para-Mount with looped ends.



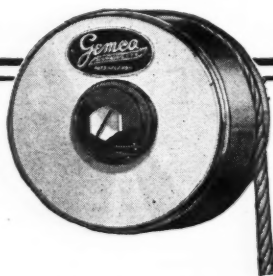
Gemco Para-Mount Wings, Adjustable



Gemco Para-Shield, with back spring bar.



Gemco Para-Mount Giant, with looped ends.



Patents Applied
for, Designed
and Licensed by
V. Van Nattan

Gemco
SHOCK
ABSORBER



See What Gemco Offers You for 1926 !

A big year for Gemco Bumper sales is certain.

With the Gemco complete line you can meet all motorists' requirements. And you can meet competition two ways — with distinctive Gemco features for greater protection, greater beauty; and with moderate prices that any motorist can afford and is willing to pay for built-in value that is readily apparent.

Gemco Bumpers eliminate the "bracket problem". The brackets are interchangeable for all bumper bars. This reduces the stock of brackets that must be carried.

Write for the new Gemco Bumper Catalog and sales plan. See what Gemco offers you for 1926.

Gemco

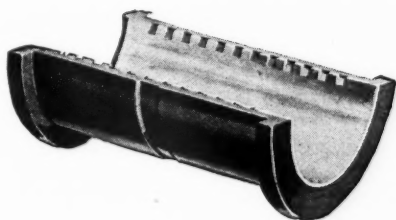
BUMPERS

GEMCO MFG. CO., 760 So. Pierce St., Milwaukee, Wis.
Makers of America's First Automobile Bumper



Charles Myers taking a turn on his way to victory and a new record on the Pike's Peak Mountain climb.

FEDERAL-MOGUL *Equipped* CHANDLER *Sets* NEW RECORD!



THE FEDERAL-MOGUL COMPLETE LINE

Bronze Back, Babbitt
Lined Bearings
Die Cast Babbitt
Bearings and Bushings
Bronze Bushings
Bronze Washers
Bronze Castings
Babbitt Metals
Bronze Cored and
Solid Bars

Charles Myers with a Pike's Peak motored Chandler Six not only won the Pike's Peak Mountain climb, but he bettered the best previous record by nearly one-half minute. Hats off to Chandler! The record is a credit to engineering skill and to the stamina of the materials that went into this car.

That Federal-Mogul engine bearings were chosen as standard equipment by the designers of this record making car, we believe, is a credit to the bearings.

The countless races, endurance runs and rigid tests that Federal-Mogul products have starred in, the long list of over 150 automotive manufacturers using them as standard pile up such a mass of evidence in their favor and constitute such positive proof of their quality and reliability that their outstanding leadership is easily understood. They lead by honest merit.

FEDERAL-MOGUL CORPORATION

A Consolidation of the FEDERAL BEARING AND BUSHING CORPORATION and the MUZZY-LYON CO.
DETROIT, MICHIGAN

F Mogul FEDERAL

Be sure to visit the Federal-Mogul Exhibit at the New York Automobile Show, Grand Central Palace, from January 9th to January 16th. Those in the trade will find it most advantageous to attend between 10:00 A. M. and 1:00 P. M. Monday and Tuesday, January 11th and 12th, as these days are set aside exclusively for those in the trade.

You Are Using Electric Motors

We can positively prove to you that by ordering your motors equipped with New Departure Ball Bearings you can cut your motor maintenance costs in half or more.

*Write for folders giving
the figures*

All motor manufacturers will supply you New Departure equipped motors if you specify them.

The New Departure Mfg. Co.

Detroit

Bristol, Connecticut

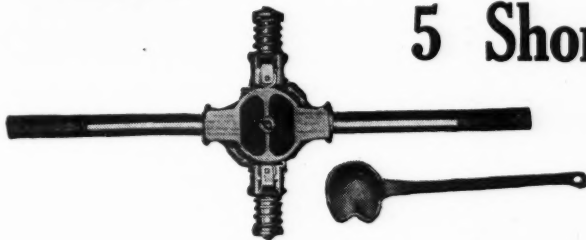
Chicago



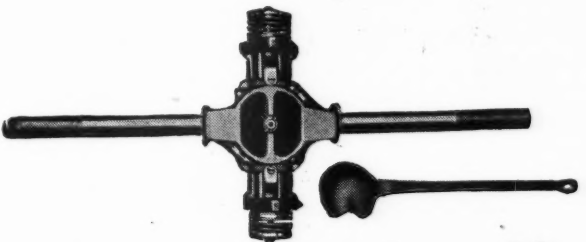
Make Rush Jobs Pay Profits—Not Grief!

The job that's wanted "right now" is the job that loses you money. It means pulling men off another job, delaying your regular work. When they return to their original job it means 20 to 30 minutes extra, relocating tools and getting back where they left off. There's only one way to beat the game—equip your shop with Hempy-Cooper Time Saving Tools. Enables you to rebabbitt main bearings in jig time. Take in more jobs, do them in half the time, with less work—and do them better. Plenty of time then for the rush job to wait its turn.

5 Short Cuts to Bigger Profits:

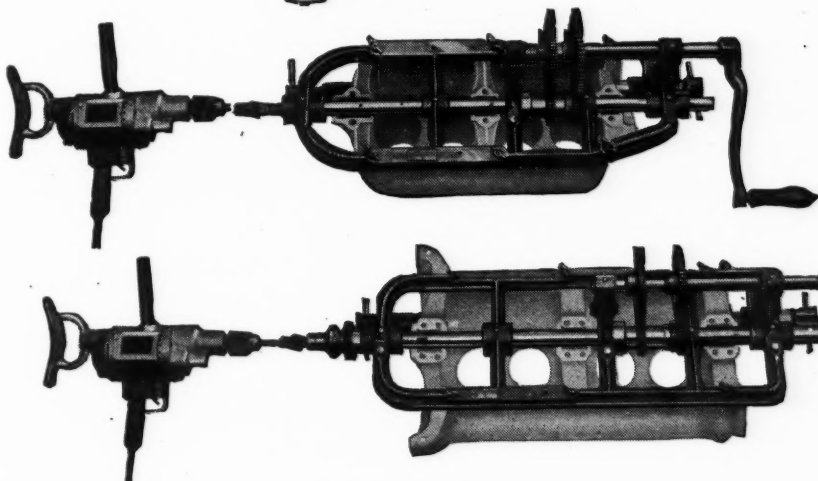


C-17—Babbitt Furnace New Style Babbitt Furnace and Torch—A simple, compact combination. Melts the babbitt ready for pouring while it removes the old bearings from the cylinder block. Removes the old bearing in 40 seconds. Leaves a clean dry surface for the new one. Model C-18—same as C-17 except has no torch.



H-4—Babbitt Pouring Mold A practical tool for babbitt the bearings in a Model T Ford Cylinder Block. So simple a 10-year-old boy can cast good bearings with it.

H-40—Babbitt Pouring Mold Babbitts the bearings in the Fordson Cylinder Block. Casts flanges on end thrust bearings. Shears off the core.



C-1—Bores Ford Main Bearings Bores all three bearings in one continuous operation in perfect alignment. Adjustable to worn crankshafts. Complete with gauge for correctly setting the cutting tools. Has socket for operating with electric drill.

C-2—Bores Fordson Main Bearings Same machine as C-1 except designed for Fordson Main Bearings. Also has gauge for facing of end-thrust bearings. These boring machines are adjusted to an accuracy of $\frac{1}{4}$ -1000th of 1 inch—and center from the camshaft opening.

This is the equipment demonstrated at all Ford Clinics throughout the country during this last year.

Ask Your Jobber High class jobbers everywhere can supply you with Hempy-Cooper Rebabbitting Appliances. Ask the one nearest you for full details, prices, etc. If he can't supply you, write us direct.

Made by
Hempey-
Cooper
Mfg. Co.

HEMPY-COOPER Rebabbitting Appliances

412
Archibald
Ave.
Kansas
City, Mo.

EXPORT OFFICE: STEVENS & CO., 375 Broadway, New York City

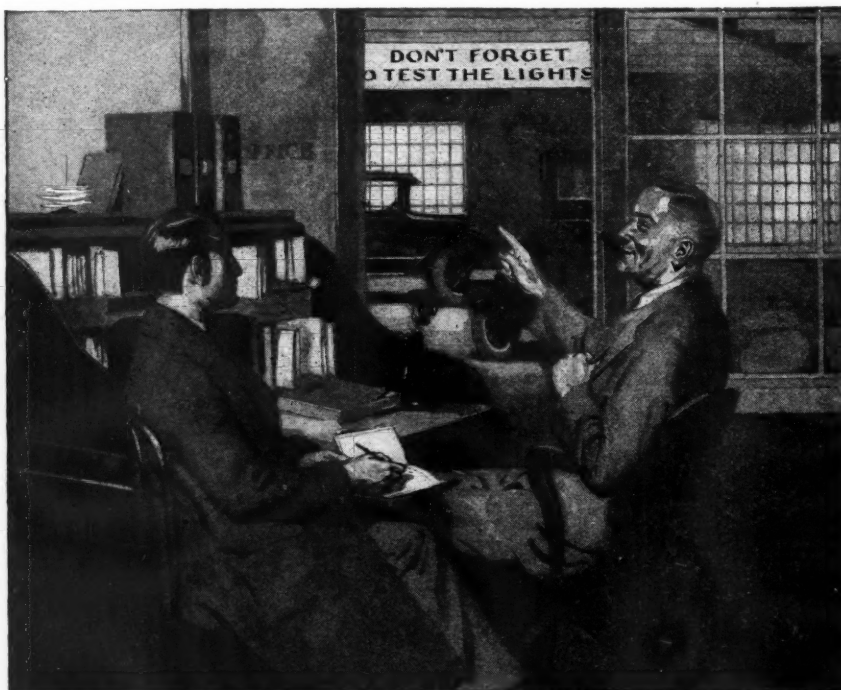
FROM THE STUDY
OF LIGHT COME
VICTOR LAMPS

Victorgrams

THERE'S A VICTOR
LAMP FOR EVERY
AUTOMOTIVE NEED

VOL. 1. NO. 3.

EDITED BY VICTOR LIGHT



"The only road lighting law there is around here is that one I passed myself," said Clardy, pointing to his famous sign.

"YOU don't need lighting laws to sell automobile lamps" continued Clardy, "the universal law of self-protection is far more effective than any man-made law.

"I simply put it to work for my own profit.

"Every man in there tests the lamps on every car we handle before he lets it out on the road.

"The result you have just put down in your book in the shape of orders."

"And believe me, Mr. Clardy, it's some result," commented Weaver, the salesman for Ajax Motor Supply.

"Your orders for replacement lamps, reflectors, lenses and bulbs are just six times what they were

last month. That's why I thought they must be enforcing a road light law here."

Clardy chuckled. "Oh, I'm some little law maker. And the funny part of it is, the men are keener for my idea than I ever was.

"They see it work. They hear what the car owner has to say about it.

"One man who has kept his car here for several years said to Dawson the other day, 'Do you know, Jim, that for the first time since I have been driving a car I can drive nights without being scared out of my wits? Those headlights of mine, since you adjusted them and put in those Victor Brown reflectors, actually light the road. It's nearly as easy as driving in daylight.'"

Weaver closed his order book which was now worth several hundred dollars more than it was when he came, and with a hearty handshake was on his way.

Later when he was enjoying a good cigar in the Pullman smoker he got to thinking about Clardy and his safety-selling plan.

"By George, I believe it would pay my house to supply signs like Clardy's to all our customers. I'm going to put it up to the old man. With a 'Don't forget to test the lights' sign in every garage on my list I'd have several hundred Clardys to fatten my order book."

* * * *

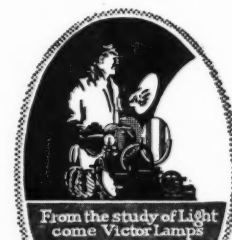
To all the potential Clardys, the Cincinnati Victor Company offers their full experience in selling better road lighting.

Write us today. Let us help you to make more money by selling more lamps and automobile lighting equipment.

Use the coupon below. The book that we offer should be in the hands of every garage and service station owner in America. IT'S FREE!

THE CINCINNATI VICTOR COMPANY

712-720 Reading Road,
CINCINNATI, OHIO



The Victor Line

FILL IN AND MAIL THIS COUPON AND WE WILL SEND YOU FREE COPY OF 28-PAGE BOOK ON MOTOR-VEHICLE HEADLIGHTING.

NAME.....

ADDRESS.....

THE CINCINNATI VICTOR CO.

716 Reading Road
CINCINNATI OHIO

THE TALE OF 4 CITIES

New York
Chicago
Milwaukee
Denver



A BUSINESS MAN in New York had just sat down to dinner when he received a long distance call from Chicago. It concerned a business deal amounting to a quarter of a million dollars, but the Chicago man had two associates — one in Milwaukee, the other in Denver. So he telephoned each of them while the line between New York and Chicago was kept

open, and the whole transaction was closed in less than 15 minutes!

SUCH is the almost hourly work of the Long Distance telephone. No distance is too great, no transaction too important, for the telephone to bring men and concerns together in conference. While men are wasting time waiting in reception rooms, while callers are learning that the men they want to see are out of town, even while offices are closed, Long Distance gets things done.

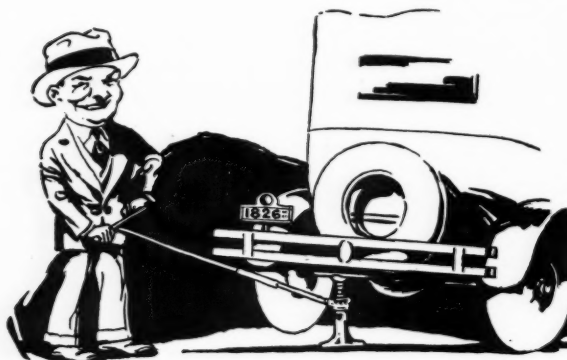
Do you use the long distance telephone only in an emergency, or as a regular means of improving results? Are your employees trained to use the telephone to save the time

and expense of trips, to make appointments and to buy and sell goods? No man who buys or sells merchandise or collects money can accomplish all he should without the regular daily use of Long Distance.

The Commercial Department of your local Bell company will analyze your business and suggest new ways in which Long Distance can help you. In the meantime, the telephone on your desk will connect you with the other side of the state or the continent just as it now does with the other side of town. What man or concern would you like to have now? *Number, please?*

BELL LONG DISTANCE SERVICE





Many a man is driving on Balloon Tires who could not change a flat, because the jack he carries does not have the range. Perhaps he has not found this out, but a suggestion from you, that he buy a Walker No. 520 Balloon Jack, may save him an unpleasant experience on the road. If I were a dealer, I would make it my business to see that my customers had the right jack, and in so doing enlarge my group of satisfied customers, because, after all, they are your greatest asset.

Specifications
Walker No. 520:
Height, 7½ in.
Raise, 8½ in. Ca-
pacity, 1 ton.
Weight, 9 lbs.
Dia. of Screw, 1½
in.—¾ in. 33 in.
Folding Crank
Handle. List
Price, \$5.25.

Willard Walker

President
Walker Manufacturing Co.
Racine, Wis.



Walker Jacks

"Dependable in Service"



SNOW

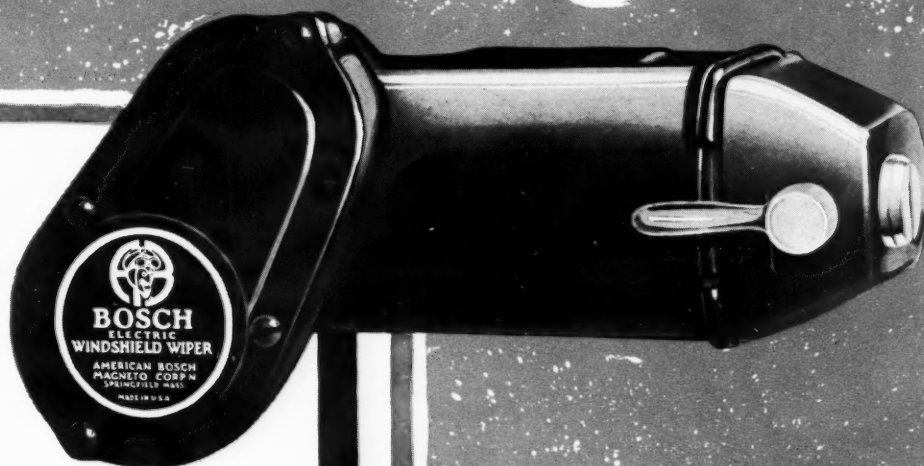
The Bosch Electric Windshield Wiper is powerful—it does not stick or get out of order. It is quiet. It operates steadily and wipes the windshield clean. It is priced low—\$9.50 complete. These direct selling features of the Bosch Electric Windshield Wiper will top your accessory lines during *this* coming rainy season—order now—today—and get *all* your sales.

AMERICAN BOSCH MAGNETO CORPORATION

Main Office and Works: Springfield, Mass.

Branches: New York Chicago Detroit San Francisco

BOSCH
ELECTRIC
Windshield Wiper

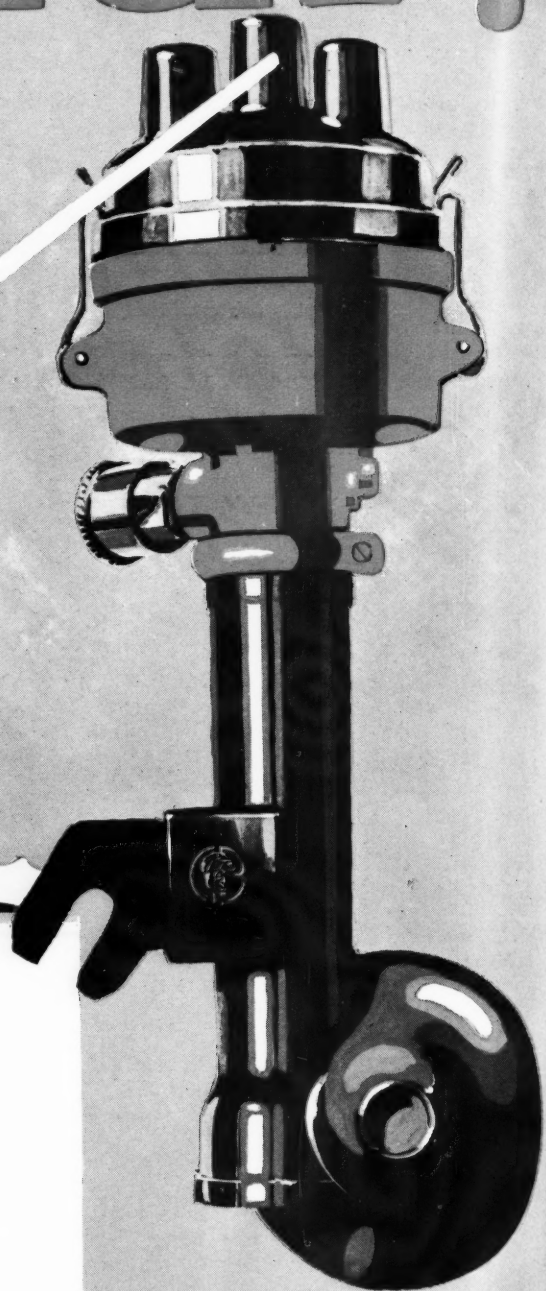


*"As Necessary
As Brakes"*



The Bosch Tandem Attachment gives full vision to both front seat occupants—\$1.75 extra

popular!



No wonder it is popular—
250,000 users, singing its
praises daily, are making
“prospects” by the thousand.
Live dealers can make big
profits closing these easy sales.
Specialize on Bosch Type 600
Ignition for Fords—It pays!

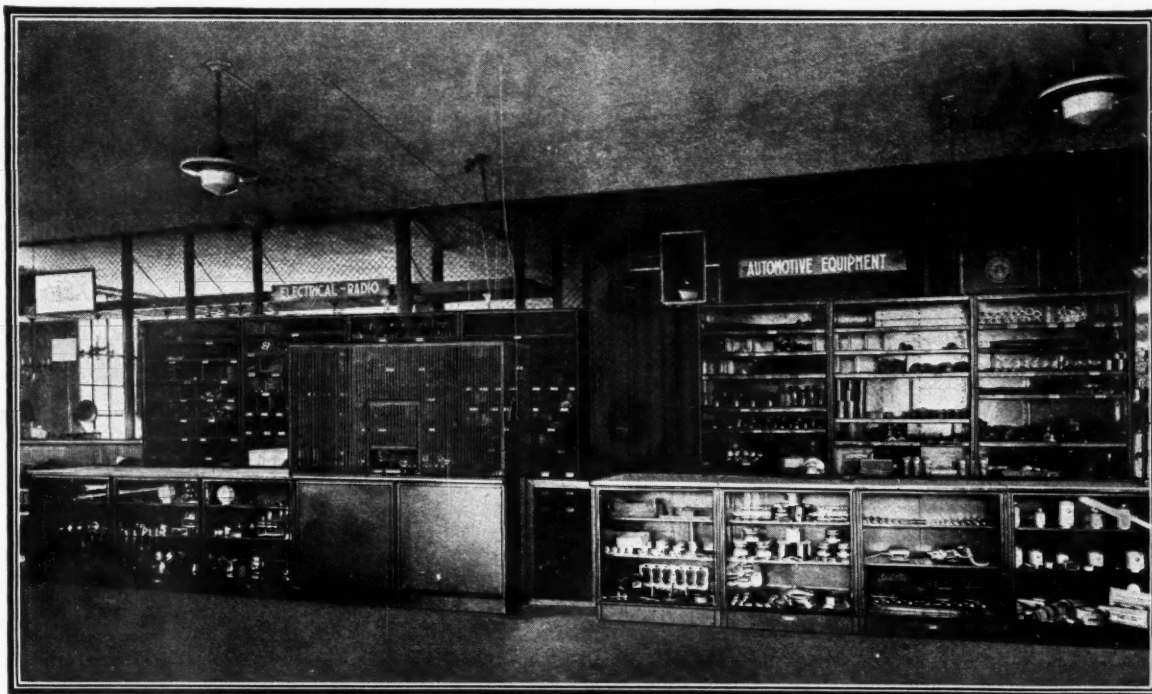
Price \$12.75 (\$17.50 in Canada)

AMERICAN BOSCH MAGNETO CORP., Springfield, Mass.
Branches: New York, Chicago, Detroit, San Francisco

TYPE 600
BOSCH
Ignition
for
FORDS

LYON AUTO PARTS CONTROL

Steel Storage Equipment for Automotive Parts



To Make Buying Easy

This dealer finds that one of the basic principles in successful selling is to make it easy for the purchaser to buy.

That's why they have their wares so well displayed in Lyon Steel Counters and, in the back, in a Lyon Auto Parts Control System.

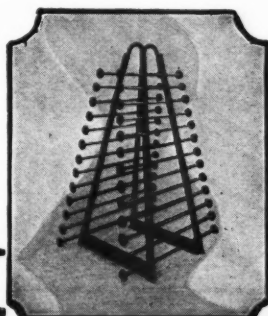
In addition they have a constant, visible check on the slow and fast moving items. They are never "out" of a part because they know that a lost sale is lost profit.

Also their own time is conserved, turned to productive work and service has a definite meaning to their customers.

Find out for yourself how a Lyon Auto Parts Control System will speed up your business, check against money tied up in dead or slow moving stock, give you efficient control of service and sales. We will be glad to tell you how others are doing it and demonstrate to you how economically you can do it.

Lyon Metallic Manufacturing Company

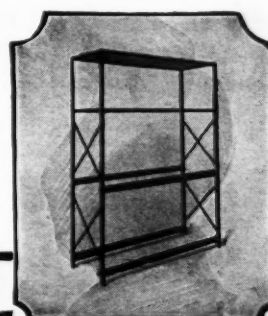
Aurora / Illinois



Lyon Auto Parts Control Systems are sold by
leading Automotive Jobbers



for every storage need



EVERY CAR OWNER WILL BE TICKLED PINK

TO SHAKE HANDS WITH THIS COLD WEATHER PROTECTION AND CONVENIENCE



Now that old man Boreas is about to cut loose with his annual spree of snow, cold and bluster—the thoughts of the car owner shift back to the cold weather troubles that knocked joy out of motoring *last* winter. He knows what is in store for him *this* winter. He realizes the need of adequate radiator protection. He is in a receptive buying mood. The

Thomas DASH CONTROL RADIATOR COVER

PAT. JAN. 28, 1919; DEC. 27, 1921

appeals to his desire for protection—plus convenience. He quickly visualizes the value of the Thomas Type Cover. He puts himself in the center of the picture. He sees at a glance the perfect workmanship—the trim, neat fit—the rich beauty of finish. He appreciates the fact that the staunchly constructed cover of waterproof leatherette lined with heavy felt eliminates danger of radiator freeze-ups and stubborn cold weather motor operation. And the convenience!

Positive control is right at his finger tips. A pull or release of thong at dash instantly raises or lowers curtain which operates on powerful spring roller concealed in base of cover. And finally “money talks”—the moderate cost puts over the sale. Excellence of design, added to convenience and multiplied by economy, makes the Thomas Dash Control Radiator Cover one of the most profitable cold-weather items any dealer can stock.

A Unique and Effective Selling Plan

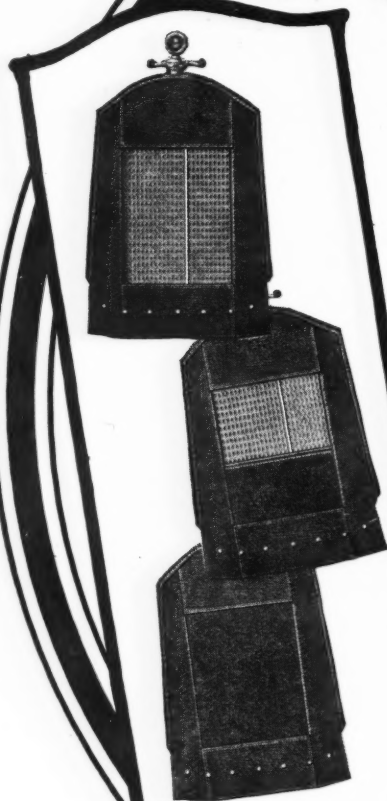
is supplied *FREE* of charge to all Thomas dealers. Use the coupon. Get samples of the free Thomas advertising. See the catchy “Mit your Car’s warmest winter friend” mitten circular—prepared for the dealer. Let us present positive proof that any dealer can increase trade and enlarge profits with the Thomas plan of publicity. Your name and address on the coupon. No obligation whatever to you.

Jobbers

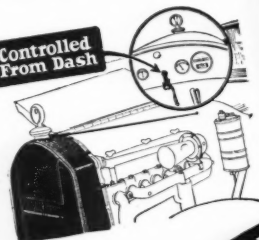
who are interested in increasing sales for their customers, should investigate the Thomas policy of dealer co-operation.

THOMAS AUTO TOP COMPANY
Muncie, Ind.

Makers of Seat Covers, Tire Covers,
Top Recovers and Curtains



Controlled
From Dash



Thomas Auto Top Co., Muncie, Indiana.
Gentlemen: Kindly send particulars of your
new sales plan and samples of advertising
supplied *FREE* to dealers.
Name
Address



The Oakland Harmonic Balancer

This new and exclusive feature imparts an unmatched freedom from vibration to the Oakland Six engine, and in a manner that is simplicity itself. Torsional vibration in any automobile engine is caused by the twist of the crankshaft under repeated piston impulses. The Harmonic Balancer—built into the Oakland crankshaft—exerts an equal twisting force in the opposite direction, which counteracts the twist of the crankshaft, thus stopping vibration at its source. This means new thrills of motoring pleasure, longer car life.

A. New Oakland Six engine with the Harmonic Balancer—uniformly smooth at all speeds.



B. Six-cylinder engine without Harmonic Balancer—not uniformly smooth—having vibration periods.

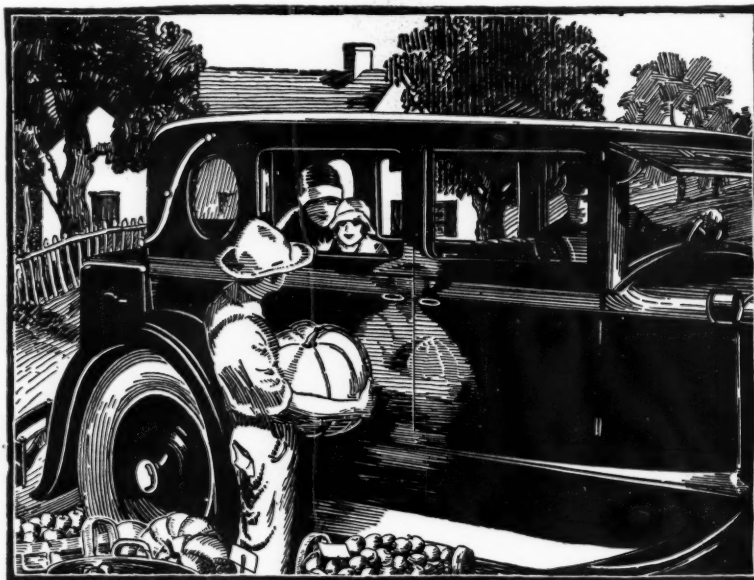
Readings taken with the crankshaft indicator, a device for measuring torsional vibration.

It is a fundamental Oakland policy that every Oakland Dealer shall receive a just return on his investment. In harmony with this policy, the Oakland discount rate has intentionally been set higher than that of others.

Roadster	Touring	Coach	Landau Coupe	Sedan	Landau Sedan
\$975	\$1025	\$1095	\$1125	\$1195	\$1295
(Old Price \$1095)	(Old Price \$1095)	(Old Price \$1215)	(Old Price \$1295)	(Old Price \$1545)	(Old Price \$1645)

All Prices at Factory

WINNING AND HOLDING GOOD WILL
OAKLAND SIX
 PRODUCT OF GENERAL MOTORS



That word "PERFECTED"

OPEX—the PERFECTED lacquer finish

Between cars there is always a choice. Between lacquers for cars there is also a choice and the choice is for OPEX, because it is *perfected*.

Perfected—in its greater durability

Perfected—in its greater tenacity

Perfected—in its higher lustre

Perfected—in its superior colors and shades

Perfected—in its ease of successful application

The word is not used lightly, but by deliberate intent. It means exactly what it says. OPEX has carried early lacquer development forward with a rush. OPEX

has changed hope into accomplishment and in so doing has proved that in the lacquer field, as in paint and varnish, perfection comes only through life-long knowledge of finishing problems.

To Automobile Dealers:

Put in your own Opex booth. You need little space—you add little overhead—you hire little help. Opex your used cars and sell them more quickly—get your money out of them and get a better price. We make no charge for helping you get your Opex service successfully under way. Send us this coupon—today.

**The Sherwin-Williams Co.,
420 Canal Road, Cleveland, O.**

Supply us, entirely without obligation, full details of your Opex perfected lacquer proposition.

Name

Street

Place



Why does Oxweld have apparatus repair stations for you?

Apparatus Repair Stations

IF YOU are a user of Oxweld apparatus, your equipment undoubtedly will be working efficiently, because Oxweld fieldmen inspect it from time to time, make adjustments, and supervise minor repairs.

Furthermore, when major repairs are necessary, these can be made at once by the nearest apparatus repair station listed below. These repair stations make it unnecessary to ship your apparatus hundreds of miles across the country to one of our factories. Delays are reduced to a minimum.

OXWELD APPARATUS REPAIR STATIONS

Boston	Massachusetts
Newark	New Jersey
Philadelphia	Pennsylvania
Baltimore	Maryland
Buffalo	New York
Pittsburgh	Pennsylvania
Birmingham	Alabama
Cleveland	Ohio
Chicago	Illinois
Detroit	Michigan
Houston	Texas
Minneapolis	Minnesota
Omaha	Nebraska
St. Louis	Missouri
Tulsa	Oklahoma
Salt Lake City	Utah
Seattle	Washington
San Francisco	California
Portland	Oregon
Los Angeles	California

REGARDLESS of how well oxy-acetylene apparatus is made or how carefully it is used, repairs, replacements and adjustments will be needed if the equipment is to function efficiently day in and day out. In this your oxwelding apparatus is like your automobile.

The automobile makers early learned that repairs for the entire country could not be made at the factory. No owner could afford the delay. Oxweld learned the same lesson, and has already established apparatus repair stations in 20 industrial centers.

Every one of these 20 repair stations is factory supervised and gives Oxweld users quicker and more economical service than would be possible if the apparatus had to be shipped to a distant factory.

When you buy oxy-acetylene apparatus remember that from time to time it will have to be adjusted or repaired and inquire about facilities for this service.

OXWELD ACETYLENE COMPANY

Chicago
3642 Jasper Place

Long Island City, N.Y.
Thompson Ave. & Orton St.

San Francisco
1050 Mission Street

Oxweld

WELDING AND CUTTING APPARATUS

WORLD'S LARGEST MANUFACTURERS OF WELDING AND CUTTING EQUIPMENT

January 7th

National Automobile Shows Issue

MOTOR AGE

IT will be a high spot of interest for many thousands of the country's best dealers—present and prospective merchandisers of your product—who will not attend the New York or Chicago Shows, but will depend upon MOTOR AGE to carry the big and important Shows message to them.

As an advertising opportunity the January 7th issue will be unusual.

No advance in rates. Last forms close January 4th. Please send space reservation order at once.

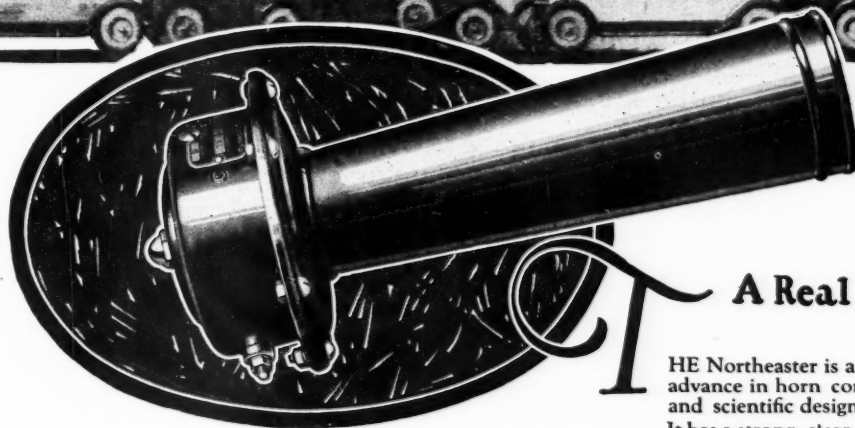
Start now to get your share of the 1926 seven billion dollar automotive market.

Plan to use this special Shows issue in a representative way. Tell the story of your product and your merchandising policies to the country's best sales outlets.

MOTOR AGE

5 South Wabash Ave., Chicago

NORTHEASTER



Elmer J. Pearson
\$7⁵⁰

A Real Magnetic Horn at a *Low Price*

The Horn That Lasts

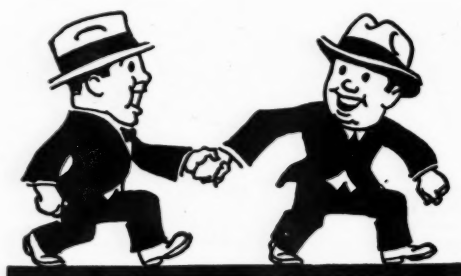
THE Northeaster is a real Magnetic Horn that marks a sweeping advance in horn construction. It is the last word in simplicity and scientific design.

It has a strong, clear note. It is full of punch and persistence without disagreeableness. It has a sure and instant response. And it is built throughout with characteristic ruggedness and long life.

Here is a Horn that is bound to win immediate favor regardless of price. Add to this the unbelievably low figure at which it is offered, and there is no limit to the demand that will be created for the Northeaster.

Now is the time. Get in at the start. Full details from any North East Service Station or Branch.

NORTH EAST ELECTRIC CO. *The Standard for Dependability and Long Life* **NORTH EAST SERVICE INC.**
Starting, Generating & Ignition Equipment - Horns - Speedometers
ROCHESTER · ATLANTA · CHICAGO · DETROIT · NEW YORK · KANSAS CITY · SAN FRANCISCO · PARIS · LONDON · TORONTO



Hand in Hand advertising and lower sales cost

It is to the buyer's interest to know that goods are *sold economically* for he pays the cost of selling just as he pays for the cost of manufacturing.

That's why more and more buyers are scrutinizing sales methods of manufacturers, for they know that excessive sales costs mean either higher prices or shrinking quality.

The seller who clings to antiquated, expensive methods of selling is no more entitled to patronage than one who runs an out-of-date factory.

Machinery has cut costs and standardized products in manufacturing and the *machinery of advertising* is accomplishing similar benefits in selling, for advertising in publications such as this one, is not an added expense, but an improved means of communication that takes the place of slower and more costly methods.

These are demonstrated facts and thinking buyers are recognizing the advantage to them of encouraging progressive, economical *sales* methods, such as have been adopted by the companies represented in the advertising pages of this journal.

The advertising these companies are doing not only cuts the cost of selling, but it increases production volume, standardizes quality, and is a guarantee of good faith.

Write us about anything you desire to know about business papers or the fields they cover.

The

ASSOCIATED BUSINESS PAPERS, INC.

Headquarters, 220 West 42nd Street, New York City

*Over 120 Publications Reaching 54 Different
Fields of Trade and Industry*

A. B. P.

"Member of The Associated Business Papers, Inc." means proven circulations PLUS the highest standards in all other departments.

This publication is a member of the A. B. P.



Anybestos



Johns-Manville
Asbestos
Brake Lining

*What's
the difference
between these
two brake
linings*

(See next page)



Anybestos



Johns-Manville
Asbestos
Brake Lining



Behind— Johns-Manville Asbestos Brake Lining are many valuable selling helps

IT is easy to choose between a good brake lining and a bad one. How about choosing between two brake linings both of which you consider good?

The choice is just as easy!

Look behind the brake lining and see what the manufacturer is doing to help you sell it—not only with advertising materials, but with ideas that bring in brake lining business.

We make Johns-Manville Asbestos Brake Lining as good as we know how. In addition to that, we have put behind it a group of selling helps, which, if properly used, should put new lining on every car that needs it within driving distance of your garage.

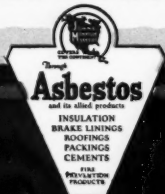
Our book "Dollars and Sense in Brake Lining" tells how. Send for your copy.

JOHNS-MANVILLE

JOHNS-MANVILLE INC., 292 Madison Avenue at 41st Street, New York City
Branches in 63 Large Cities For Canada: Canadian Johns-Manville Co., Ltd., Toronto

ASBESTOS BRAKE LINING
CLUTCH FACINGS ~ PACKINGS ~ ETC.

Printed in U. S. A.





Sell them Winterfronts to keep the ice off their feet

[Sales Reason No. 4]



We say: "Sell them Winterfronts to Keep the Ice Off Their Feet."

And it is easy to see why Winterfront does this, because the shutters shut out that hurricane of cold air which otherwise rushes over the motor and under the floor boards.

That is only one of the reasons for selling them Winterfronts. Use these points, too—

- prevents excess carbon because most of the starting is done with a warm engine
- Saves most of the pounding and strain that comes from forcing a cold motor
- gives the motor a brain so that the flow of air is regulated automatically—nothing to forget—nothing to remember.

Pines, Chicago, makes the only Winterfront. It is Detachable. It is the Automatic Shutter.

As every automobile man knows, a motor is equipped at the factory with a cooling system that will keep the motor cool enough for satisfactory operation in hot weather.

You also know that on most cars there is no way to prevent over-cooling in Winter.

A stream of cold air as large as your body rushes through the radiator unless it is controlled—

—Winterfront is the only Automatic Detachable Radiator Shutter.

All this is explained to the public in THE SATURDAY EVENING POST of November 21st.

You can put it on in ten minutes. Only 4 slender bolts which go through the air openings in the radiator to put the Winterfront on. No other connection to make.

PINES WINTERFRONT CO.

412 N. Sacramento Blvd.

Chicago, Ill.

There is a distributor near you with stock for immediate shipment. Write us for his name and for our special window display

WINTERFRONT
TRADE MARK REG U S PAT OFF

PINES AUTOMATIC RADIATOR SHUTTER

List Prices: Large \$28.00 Medium \$25.00 Small \$22.50

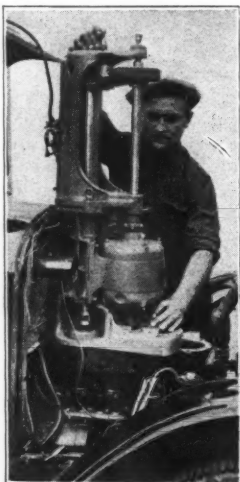
Use the margin and let us know what car you handle. Also name of distributor through whom you prefer to buy

Car handled.....

Name of Distributor.....

Please sign on the margin

**"My Average Profit on 4-Cylinder Blocks Has Been \$18
and on 6-Cylinders \$25"—Arnold Shober**

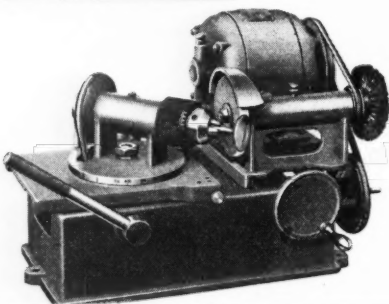


Simplicity

**Portable Reborer and Grinder
Offers the Very Same Chance to You**

The fact that service men make money with SIMPLICITY Portable Reborers and Grinders means just one thing—there is a big, paying demand for the kind of work this equipment will do. All over the country owners of SIMPLICITY outfits are making good. You can do the same.

Ask us for a FREE demonstration in your shop—on a job you have on hand. It will show you how the profits grow. And let us tell you about the 10% payment plan, too. Your credit is good with us.



Valve Face Grinding Machine

Refacing valves perfectly at any angle. Refaces tungsten valves in 20 seconds. Insures perfect joint between valve and seat. Regrinds re-seating cutters. Cleans carbon from valves, spark plugs, etc.

Crank Pin Tool

Guaranteed to true up worn, scored or egg-shaped crank pins and leave them perfectly round. Any mechanic operates it. Makes money fast.



**Simplicity Manufacturing Co.
110 Spring Street, Port Washington, Wis.**

Experienced mechanics with sales ability wanted in our sales organization

DIXON'S 677

FOR TRANSMISSIONS AND DIFFERENTIALS

Meets all requirements of a year-round lubricant.

Not affected by extremes of heat or cold, it will not stiffen and channel in cold weather and leave gears and bearings unprotected.

Dixon's 677 reduces power losses, eliminates strain and provides better and longer lubrication.

Write for Booklet 82-G. and
Dealer Proposition

Joseph Dixon Crucible Co.
Jersey City, N. J.

Established 1827

Resolutions for 1926

1- I'll take on that big paying Vesta line!

VESTA

COSTS LESS PER MONTH OF SERVICE

The beginning of the year is the time to make good resolutions—and all the rest of the year is the time to keep them. That's why for Resolution No. 1 we recommend "I'll take on that big paying Vesta line." It's a resolution easy to make, and easier to keep—because the longer you keep it the more money you make—and that's what you are in business for.



*No Other Battery
Has Them.*

*Isolators Lock the
Plates Apart.*

VESTA is a big paying battery line. First, because it is a complete line. It takes care of every battery need in the automobile and radio fields. It represents a spread in price that covers every demand from the "Isolator" (patented) quality, to purely competitive numbers as good as any on the market, and better than most of them. Unless you know all there is to know about the entire VESTA Auto and Radio "A" and "B" line, let's get together and talk it over. How much money you can make in 1926 depends on it.

VESTA BATTERY CORPORATION

2100 Indiana Ave.,

Chicago, Ill.

New!

"Twin" Assortment Cotter Pins and Lock Washers

In a Handy, 2-Screw-End
Container

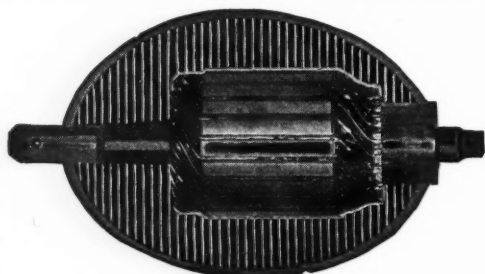
Cotter Pins in one end, Lock Washers in the other. A double screw-lid can, divided in the center by a permanent partition. Contents always separate, no danger of mixing, easily located, container being fully labeled.

The "Twin" Assortment consists of approximately 100 Cotter Pins—sizes ranging from 1/16" x 1/2" to 5/32" x 1 1/2"—50 Lock Washers, Bolt sizes from 3/16" to 5/8".

Complete line of Lock Washers and Cotter Pins in standard packages and assortments.

Ask Your Jobber for the W. W. Line.

WESTERN WIRE PRODUCTS CO.
St. Louis, Mo.



Doing the Rewind Job RIGHT!

At the Fredericks plant quantity production has made possible a lower rewinding rate. But still the same good quality. Every Frederick's rewind is insulated. The 90 day guarantee makes profits sure. Get the interesting booklet that gives complete prices and other information.

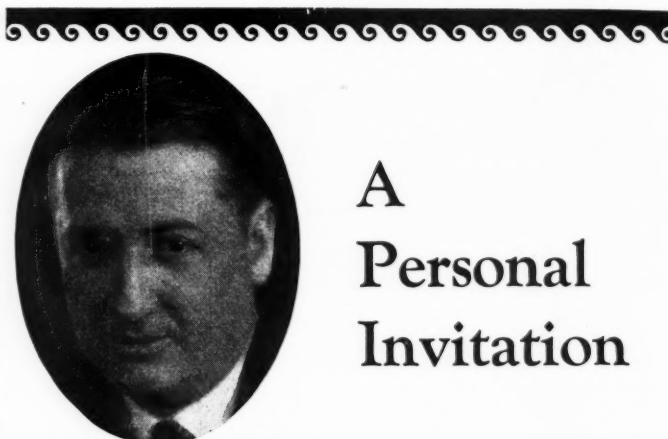
FORD GENERATOR Armatures Rewound.....	\$1.50
FORD Starter Armatures Rewound.....	1.50
ALL OTHER TYPES TWO-UNIT Generator Armatures Rewound	3.25
ALL OTHER TYPES TWO-UNIT Starter Armatures Rewound	3.25
ALL TYPES MOTOR GENERATOR Armatures Re- wind	8.00

GUARANTEED to give the same
satisfaction as new armatures.

The H. M. FREDERICKS CO., Lock Haven, Pa.

FREDERICKS

Rewinding Service



A Personal Invitation

THE management of The Hollenden Hotel takes pleasure in extending to the readers of Motor Age a cordial personal invitation to make The Hollenden their home when in Cleveland. There is nothing better in Cleveland in the way of large cheerful rooms fully furnished and modern in every respect; courteous, unobtrusive service; an atmosphere of homelike comfort and refined surroundings; food of the very best, served in the traditional Hollenden manner and a schedule of rates and charges as low as that of any good hotel in the country.

The Hollenden Coffee Shop is noted for its good food and rapid table and counter service.

I want to assure you of my personal attention to your comfort while you're at The Hollenden.

Leo Delit
General Mgr.

In Cleveland It's

THE HOLLENDEN

Superior Avenue at E. 6th Street, Cleveland, Ohio

A New Chapter Every Thursday

Each issue of MOTOR AGE is a new chapter, continuing the story of the development of the industry.

And for those who apply the new ideas it gives them, it also continues the story of the development of their individual success.

Read MOTOR AGE every week.

MOTOR AGE

5 So. Wabash Ave.

Chicago, Ill.

WINTER TROUBLES ELIMINATED

Protect your Motor and prolong its
life with a

Bemis Electric Motor Heater

May be attached to any motor that is cooled with liquid of any kind. Size 2 inches diameter 5 1/2 inches in length. Easily connected without changing any part of motor. Installed in about 30 minutes, costs about one half cent an hour for current.

PRICE \$15.00

Manufactured and Guaranteed
against Defects in Work-
manship by

BEMIS MOTOR HEATER CO.
601-604 Andrus Bldg.
MINNEAPOLIS, MINN.

MAKES WARM FRIENDS OF COLD MOTORS





There's a whale of a profit under the cylinder head!

EVERY time a shop man removes the head of a motor, there's a wonderful chance to cash in on the fastest growing, most profitable end of the automotive industry—replacement parts and motor overhauling.

When you consider the enormous number of cars in every territory that need cylinder over-sizing, and the good profits this work brings, you'll understand why you should be equipped to handle it.

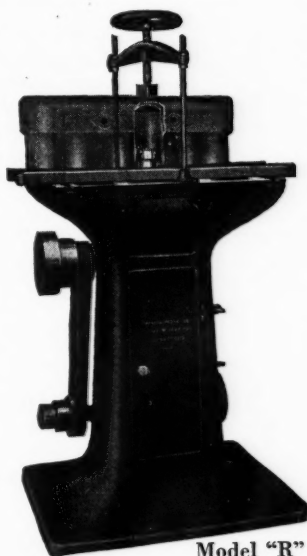
Here's a typical example of the profit garages are making with Stormizing Machines on over-size jobs for a 3 1/4" six cylinder motor.

Selling Price of job.....	\$50.00	
Cost of 6 pistons.....	\$7.86	
Cost of 6 pins.....	1.53	
Cost of 18 rings.....	3.78	
1 hour Stormizing labor....	.70	
3 hours for fitting pistons..	2.10	
Overhead—50% of labor cost	1.40	17.37
		\$32.63
		Your profit

The Storm Machine is as accurate as factory equipment. It's easy to operate—any mechanic can run it. The responsibility for accuracy rests entirely on the machine, not on human skill. The low cost of Storm equipment puts the profits from cylinder over-sizing within easy reach of every shop. Let us tell you about Stormizing.

Stormizing Machines are built in three sizes: portable, semi-portable and stationary types. Each model works on exactly the same principle, and each does perfect, precision work. The only difference lies in cylinder capacity.

We have an authoritative book called "Facts" that shows how to recondition cylinders and do satisfactory work, that builds business. To those interested in motor reconditioning this book is free. Just write us for it.



Model "R"

STORM MFG CO. INC.
406A SIXTH AVE., S., MINNEAPOLIS, MINN.

HEY! FELLERS



GET ACQUAINTED!

The Nineteenth Plant of

WATKINS
Complete REBABBLING SERVICE

5706 Harvard Street E.
PITTSBURGH, PA.

To give you one day service and Watkin's Quality of correctly machined connecting rods rebuilt under S. A. E. specifications and broached to size with mirror finish.

Home Office and Plant, Wichita, Kansas

NEW YORK 33 W. 60th St.	CHICAGO 57-61 E. 24th St.	LOS ANGELES 1007 E. 9th St.
PORTLAND 14th and Everett St.	WASHINGTON 1628 L. St. N. W.	MEMPHIS 278 Washington St.
INDIANAPOLIS 19 W. South St.	TOLEDO 1942 Putnam St.	TORONTO, CAN. 122 Adelaide St. W.
DENVER 1818 Blake St.	SEATTLE 725 E. Pine St.	ST. LOUIS 4216 W. Easton Ave.
HARTFORD 28 High St.	SYRACUSE 211 Wyoming St.	CLEVELAND 5020 Euclid Ave.
OMAHA 1006 Douglas St.	PITTSBURGH, PA. 5706 Harvard St. E.	WATERLOO N. E. East 4th St.

Authorized exclusively by the Buick Motor Company
to rebabbitt and rebuild Buick Rods.

25
Uses
On Every
Car

TENAX
SHEET
PACKING
TANPAC

The service man who is acquainted with the uses of TENAX and TANPAC Sheet Packing, knows where to go for the best results in the case of 25 points of necessary maintenance on every car. Write us for complete information on these 25 ways to make money with TENAX and TANPAC.

Advance Packing & Supply Co.
808 Washington Blvd., Chicago, Ill.
Pacific Coast Distributors: Allied Industries, Inc., Los Angeles, San Francisco, Portland and Seattle

Gill

*Products
of Quality*

**PISTON RINGS
PINS - - PISTONS**
GILL MANUFACTURING CO.
8300 South Chicago Ave., Chicago



PISTON PIN BUSHINGS
Write for Price List No. 16
JOHNSON BRONZE CO.
New Castle, Pa.

JOHNSON
STANDARD QUALITY

ATWATER KENT

Ignition for FORDS

\$10.80 Including Cables and Fittings.

Transmissions
and Clutches



Trucks, Busses
Passenger Cars

QUICK SERVICE ON COMPLETE UNITS OR PARTS

BROWN-LIPE GEAR CO.
SYRACUSE, N. Y.

BOLTS BLUE PRINT BUSHINGS

"Made to Blue Print"

"Bp"

guarantees to the Replacement Trade the same high standard of Quality and Accuracy demanded by the car manufacturer.

The Fostoria Screw Co., Fostoria, Ohio

"Bp"

**There Simply Isn't Any Better Flux
Made Than Rubyfluid!**



A complete substitute for dangerous acids, Zinc Chloride, Sal ammoniac and other mixtures commonly used as a flux. Ruby Fluid is quick acting, anti-rusting and is always ready for instant use. Ruby users include the foremost industries of the country. Send for generous Free Sample

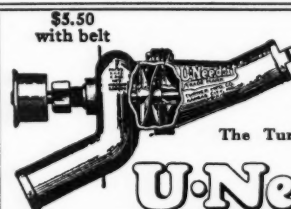
Rubyfluid

COMBINATION
SOLDERING AND TINNING FLUX

THE RUBY CHEMICAL CO.

68-70 McDowell Street

Columbus, Ohio



\$5.50
with belt

**The Big Seller in the Ford
Pump field—at a new low
price.**

Get our dealer plan.
The Turner Mfg. Co., 31st and Reanoke Rd.
Kansas City, Mo.

U-Need-It ROTARY PUMP
for FORDS



Rubber Tubing for the Trade

EKLA radiator hose—All-Rubber or Cloth-Inserted, tire pump hose and windshield wiper tubing, all in standard lengths, will show you better profits and your customers better service. Insist on EKLA Brands when buying these items.

THE ECLAT RUBBER COMPANY
Cuyahoga Falls, Ohio

PROTECTOMOTOR 99 ⁹/₁₀
REG. U.S. PAT. OFF.
Perfect Positive Protection
Filters all dust, sand and grit out of air supply to carburetor and motor. Write us for facts.
STAYNEW FILTER CORPORATION
Rochester, N. Y.

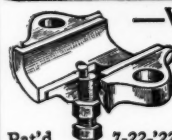
EFFICIENT

Hycoc
Brake Lining
FOLDED AND STITCHED
HYDRAULIC COMPRESSED

Millions of feet
annually installed
as factory equipment

**THE MANHATTAN
RUBBER MFG. CO.**
PASSAIC, N. J.

TAKE THE END-PLAY OUT!



—WITHOUT PULLING THE MOTOR

The C. A. ADJUSTABLE CENTER BEARING CAP corrects Ford crankshaft end play and sets magneto for highest efficiency without removing the motor. Easily and quickly installed. Guaranteed for one year. List price \$3.75. Ask your jobber or dealer or write us direct.

ADJUSTABLE BEARING CO., Inc.

Pat'd 7-22-'22

Dept. M.

Brazil, Indiana

The Original
Bosch

Franchise details for selling ORIGINAL BOSCH Automotive Equipment will be sent to any Distributor, Dealer or Service Station on request.

ROBERT BOSCH MAGNETO CO., Inc.
109 West 64th Street New York, N. Y.



ORIGINAL BOSCH units bear the full name, Robert Bosch, and the trade mark shown at left. These are the identifications of Bosch quality—famous since 1887



CANTON

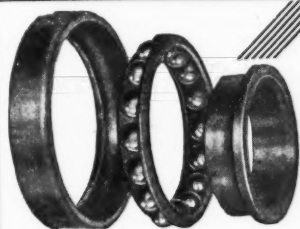
Portable Crane and Hoist

The purpose of the Canton Portable Crane and Hoist is to make more money for service and repairshop men.

Write for a copy of the illustrated booklet M A describing the outfit. It will show you the way to better profits.

The Canton Foundry & Machine Co.
Canton, Ohio

New York Office—303 East 15th Street



Our Engineers Will Gladly Help You

Your blueprints in the hands of our engineers will assure you prompt and accurate information on your Angular Contact Thrust Bearing, Angular Contact Radial Bearing, and Thrust Ball Bearing requirements.

THE BEARINGS COMPANY OF AMERICA, Lancaster, Pa.
Western Sales Office, 1012 Ford Bldg., Detroit, Mich.



A KLEAN-RITE Auto Laundry Franchise Is a Big Money-Maker

Write for a copy of our booklet on "The Business Possibilities of An Auto Laundry." It contains valuable information. Sent free upon request.

KLEAN-RITE AUTO LAUNDRY CO.
1710 E. 75th St., Chicago

BRUNNER
AIR COMPRESSORS
FREE

Write for the Book "AIR PROFITS"

describing many new uses for compressed air. Shows how to make an air compressor earn greater profits.

BRUNNER MFG. CO.
UTICA NEW YORK



PROTEX TIRE CHAINS

Protex Chain Co., Inc.
Waynesboro, Pa.

Absolutely Stop Skid

Many small horseshoes grip the road and prevent slip. The first scientific anti-skid device.

WEL-EVER

"OIL CONTROL" PISTON RINGS

The Motor Necessity That Has Made Good
Backed by Seven Years' Satisfactory Service

THE WEL-EVER PISTON RING CO., TOLEDO, OHIO

Sold most everywhere. If your dealer cannot supply you write us.

A New Aid in Automotive Work

Light Follows the Vision

Both hands free. Light exactly where you want it.



Price for frame, light, battery and container \$5.00
A big seller
Send for further details

Complex Oscillator Corp.
775 E. 143rd St.
N. Y. City

Protect the Oil-Grooves

By finishing bushings with FULL spiral fluted SMOOTH-KUT Reamers. The full spiral causes a continuous shearing action that cuts clean and can't hurt the oil-grooves.



Patented April 7, 1925.

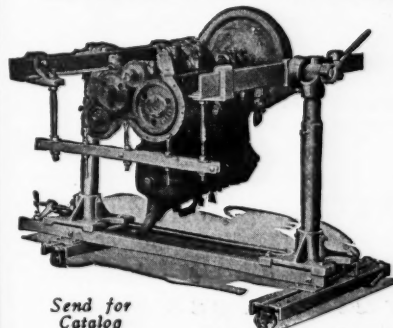
SMOOTH-KUT are the only full-spiral expansion reamers made. They are guaranteed, and reground by us at cost. Studebaker, Velle, Franklin, Lycoming, Muskegon and others use SMOOTH-KUT in production. As a finishing tool for the Piston pin hole. Your jobber can supply them singly or in sets, ASK FOR THEM BY NAME as imitations are inferior products.

Millersburg Reamer & Tool Co., Millersburg, Pa.

SMOOTH-KUT EXPANSION REAMERS

(Trade Name Registered)

Get a Manley



Send for Catalog

Universal Engine stand. In a class by itself. The universal suspension bar, a fitting suspending 75% of all motors in use, the sliding brackets which adjust themselves to all motor suspensions without holes in the side rails, the height adjustment, etc., are paramount features.

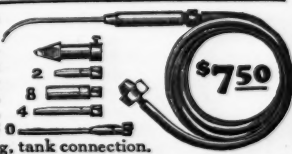
Plain and Geared types. In three minutes you can convert into an Axle Stand superior to a any special Stand. Special Fittings for Cadillac, Dodge, Ford, etc.

MANLEY MFG. CO., YORK, PA.

TURN WASTED TIME INTO MONEY!

Every Purchaser Finds Numerous Uses for the Torit Acetylene Torch No 13

Uses Acetylene Only. No oxygen or air pressure required; tips suck in air. Simply connect to Presto auto tank, light gas, and the outfit is put to work. Beats anything you ever tried for soldering, heating, melting or light brazing. Consists of 4 tips for different kinds of work, soldering copper, 5 ft. tubing, tank connection.



ST. PAUL WELDING & MFG. CO. 169 Third St., St. Paul, Minn.

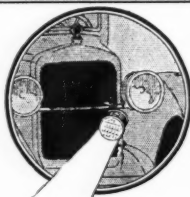
THE WALDEN FORE-LITE

Mounted ahead of the radiator and operated like a spotlight from the instrument board, the WALDEN Fore-Lite satisfies a need hitherto filled by make-shifts. Universal fittings. Selling fast wherever introduced. Ask your jobber, or write us direct, giving his name.

THE WALDEN CO.

1114 S. Michigan Ave.

Chicago



**The
SKINNER
OIL
RECTIFIER**

More than a new accessory, a necessity. Makes one filling of oil good for 2500 miles or more. Prevents crankcase dilution. Prevents oil pumping. Improves lubrication, thus saving fuel.

Profit by the interest this device is creating among car owners.

Write for complete details.

THE MASTERCRAFTS CORP.
Brattleboro Vermont

**They Won't Come Back**

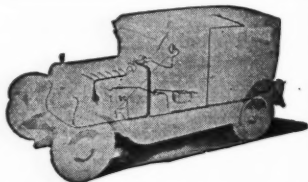
Those jobs won't come back showing oil passing, compression loss and crank-case dilution if you use a Hall Hone. The Hall makes cylinders both round and parallel. Ask your jobber.

THE HALL MFG. COMPANY

512 Hall Bldg., 1600-06 Woodland Ave.
Toledo, Ohio

**Packard
Cable**

The Packard Electric Co.
Warren, Ohio



Kawneer
SOLID COPPER
STORE FRONTS

Write for Special Book Garage Fronts

THE KAWNEER CO., 3124 Front St., Niles, Mich.

L&S VIBRATION ELIMINATOR

(PAT. PENDING)

makes OVERLAND FOURS quite
Vibrationless

MAKE US PROVE IT—WRITE

LA MERE & SARDESON, INC., Mfrs.

1906 CENTRAL AVE. — MINNEAPOLIS MINN.



Manufactured
by

**CHICAGO ROLLER
SKATE COMPANY**

4458 West Lake Street
CHICAGO ILL.

Thermoid
Hydraulic Compressed
Brake Lining

FROM THICK
TO THIN
DOWN TO THE
LAST PLY
IT HOLDS

CRANE
Wheel and Gear Pullers

CRANE PULLER COMPANY

South Deerfield, Mass.

U. S. A.

RAMCO
Cushion
INNER RINGS

fit behind piston rings and keep them in perfect contact with the cylinder walls at any motor speed or temperature.

RAMSEY ACCESSORIES MFG. CORP., ST. LOUIS, MO.

Here is a new necessity and convenience for any make of closed car and so low priced every owner is a prospect. This

\$1.50**CLOSED CAR VENTILATOR**

Adapted to any make of closed car. Prevents moist windows, gases, and keeps interior always well ventilated winter and summer. Write today.

Lewis Manufacturing Company, Inc.

219 Orchard St.

Sharon, Pa.

DILL
INSTANT-ONS

Dust and Valve Cap

Off or On in 5 Seconds

The Dill Manufacturing Co.

Cleveland, O.



SMOKELESS CARS
DRY PLUGS

Guaranteed with
MEGSON RINGS
4 years' tested service
Your jobber—at once
or write direct

Megson Piston Ring Co.
807-11 Flatbush Ave., Brooklyn, N. Y.

KISSEL

CUSTOM BUILT

Kissel Motor Car Co., Hartford, Wis.

ZENITH
CARBURETOR

More
Power
Less
Fuel

Zenith - Detroit Corporation, Detroit, Mich.



Thirty-seven
BRANCHES

AHLBERG BEARING COMPANY
321 EAST TWENTY NINTH STREET, CHICAGO ILLINOIS



UNITED STATES Portable Electric DRILLS

Ask for
Catalog 195

THE UNITED STATES ELECTRICAL TOOL CO.
Cincinnati, Ohio, U. S. A.

Built by the oldest
maker of
Portable Electric
Drills in the
World.

Rust Removing and Preventing Chemicals for Paint Job Permanence

American Chemical Paint Company

General Offices and Factory
Ambler, Pa.

Detroit Office
6339 Palmer Ave. E

Canadian Factory
Windsor, Ont.



CONDENSER TROUBLES?

An ignition system is no better than its weakest element. A Cylinder condenser that will hold its proper capacity (stay put) will make better sparks, easier starting and a smoother running motor. Easily installed, connect one wire to the circuit breaker. Write for circular and prices.

Severson Magneto Engineering Co.
538 Fernwood Ave., TOLEDO, OHIO.

NIMS PUMP for FORDS

Sold Everywhere \$5

NIMS PUMP CO.
STOCKTON, CALIF.

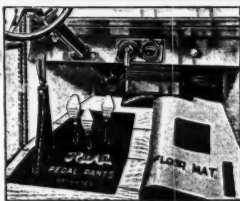
Eastern Office & Warehouse, 201 No. Broad St., Philadelphia

Cash in on This Profit Maker! Riepie PEDAL PANTS

Keeps cold air from whizzing through floor openings in Fords, Chevrolets, Dodges, Stars, Grays, Overland Fours. A sure-fire hit when the thermometer drops. Sells quickly—adjusts without tools—big profits.

DURKEEATWOOD & CO.
MINNEAPOLIS, U.S.A.

Ask your jobber today.

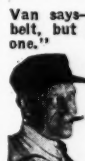


A Word to the Dealer Who Has Never Handled Radio Equipment

WE offer you exclusive territory and a permanent business. We start you with a complete set at a price that beats competition, and the opportunity exclusively to handle the products of the foremost radio designer of the day. Get in touch with your Jobber at once—or wire Sales Department, giving his name and address.

MODERNOLA COMPANY, Inc., Johnstown, Pa.

DELANO RADIO



Good Fan Belts

Sell the new type Gilmer Belts—specially built to last. Ask your jobber for the free display cabinet and stock keeper with five shelves.

Gilmer

L. H. Gilmer Co.
Philadelphia

AMERICAN Visible Gasoline Pumps Visible Lube Outfits

Unexcelled for measuring, speed, simplicity, appearance and economy of operation.

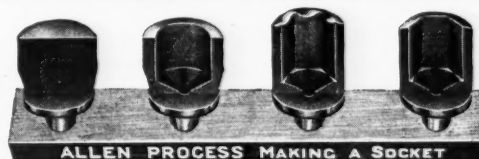
The American Oil Pump & Tank Co.,
Cincinnati, O.



Curtis Pneumatic
Machinery Co.

1527 Kienlen Ave.
St. Louis, Mo.

Cold-
Drawn
Sockets



ALLEN
Wrench
Sets

The Allen Manufacturing Company, Hartford, Conn.

PARTS

AUTO PARTS

Save 20 to 80 per cent. Send us your old parts, we can duplicate them. We have everything for the car or truck and parts for any car ever made. We are the largest car wreckers and replacement parts house in the World. Ask for our free catalog and monthly bargains lists.

Warshawsky & Co., Inc.
1915-31 S. State St., Dept. A. W.,
Chicago, Ill.

PISTONS & PINS

FOR OLD AND NEW CARS
LIGHT WEIGHT CAST IRON PISTONS
FINEST QUALITY LOWEST PRICES

SPECIAL DISCOUNT TO DEALERS

LAMBERT & MANN CO.
215-21 N. Wood St., Chicago, Phone West 4918

HOUSE OF A MILLION AUTO PARTS

The largest stock of new and used car and truck parts in the world. We have everything. Always mention model and serial number in order. Write us. All inquiries answered promptly.
DOUGLAS AUTO PARTS CO., INC.
3003-5-7-9 South State St., Chicago, Ill.

CLASSIFIED ADVERTISING

PARTS

AUTO PARTS

SAVES 50% TO 75% ON ALL CARS
New and Used Gears—Springs and Axles—Cylinders—
Motors—Rear Systems, etc. Wire or Write

INDIANA AUTO PARTS CO.
608-10 N. CAPITOL AVE., INDIANAPOLIS, IND.
LARGEST CAR WRECKERS IN INDIANA

DOWMETAL PISTONS

Lighter, stronger, and longer wearing than aluminum or iron. Can be fitted with bronze bushings in the wrist pin holes same as in iron pistons. Dowmetal has no permanent growth. The expansion is little more than iron.

SEND FOR PARTICULARS

LAMBERT & MANN CO.
Cylinder and Crankshaft Grinding
215-21 N. Wood St. CHICAGO Phone West 4918

HELP WANTED

SALES MANAGER—Wanted by old established concern in the Chicago manufacturing district, selling its products to the wholesale heavy hardware and automotive equipment jobbers. Must be capable and with experience to be able to expand and direct sales. State experience, salary desired, age, etc. Address Box 6255, MOTOR AGE, 5 S. Wabash Ave., Chicago, Ill.

PATENTS & PATENT ATTORNEYS

PATENTS

Secured. Trade-marks and Copyrights Registered
Prompt service. Highest references. Established 1884.
Milo B. Stevens & Co. Registered Patent Attorneys.
Offices: 639 F St., Washington, D. C.
10 Monadnock Block, Chicago, Ill.

Attorney-at-Law and Solicitor of Patents

C. L. PARKER

Formerly Member Examining Corps, United
States Patent Office

American and foreign Patents secured. Searches made to determine patentability and validity. Patent suits conducted. Pamphlet of instruction sent upon request.
McGill Building, WASHINGTON, D. C.

BUSINESS OPPORTUNITIES

FOR SALE—Well established garage business in thriving North Georgia city. Located on Dixie Highway. Large number regular customers and splendid tourists' trade. Complete repair and accessory business with agency for popular car. Ideal living conditions. Capital invested \$14,000. Yearly gross business \$50,000. Prospects for future expansion very bright. If interested write Reeve Garage, Calhoun, Ga.

FOR SALE—Automobile business and modern garage with dwelling adjoining. Popular agency. Wonderful opportunity in thriving town. Center of hard roads. Address Box 6256, Motor Age, 5 S. Wabash Ave., Chicago, Ill.



Braze, solder, melt and fuse with this handy 5-in-1 Outfit

For soldering radiators, straightening fenders, tempering, drawing and thousands of other uses, the Prest-O-Lite 5-in-1 Outfit is always instantly ready. No pumping or generating, Prest-O-Lite Gas from the convenient tanks—universally used for heavy-truck lighting, supplies an intense heat.

The 5-in-1 Outfit includes a torch handle, four interchangeable torch heads and soldering iron attachment. These bring you the exact flame for every requirement. In time saving alone, this outfit will greatly increase the profits of your repair department.

You'll especially like the soldering iron attachment—an iron that needs no preheating or reheating. It is hot almost the instant it is lighted—and it stays hot.

This outfit, complete with six feet of durable rubber hose, tank connection and wrench, comes to you packed in a neat tool roll. Price \$7.50.

One tank of Prest-O-Lite Gas is all you need to operate the entire outfit. Thirty-six big gas-producing plants supply thousands of Prest-O-Lite Stations located in all parts of the country. You can always get a full tank for an empty one by paying a small amount for the gas only. Write for complete information today.

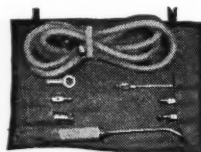
THE PREST-O-LITE CO., Inc.
INDIANAPOLIS, IND.

New York Dept. J-12 San Francisco
In Canada: Prest-O-Lite
Company of Canada, Ltd.,
Toronto, Ont.

Prest-O-Lite



The Prest-O-Lite Tank—the same kind that is used everywhere today for lighting heavy trucks.



The Prest-O-Lite 5-in-1 Outfit, packed complete in attractive canvas case. \$7.50



Torch handle with "A" Torch Head—also long and short "B" Torch Heads; "C" Torch Head and Soldering Iron Attachment.



The 5-in-1 Outfit, rolled in a neat, convenient kit.

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You can't have a good picnic with all cake and no sandwiches

THERE's nice profit in fancy specialties. But don't forget that there are also mighty good profits in a steady, bread-and-butter line like fan belts, as any Graton & Knight dealer will tell you.

Even as fan belts are so often handled—kept under the counter and brought out when asked for—Graton & Knight Fan Belts keep right on selling. For there is a never-ceasing demand for fan belts of known quality. A demand which, when given a chance, will bring profits that are a big help in meeting the overhead.

Let our handy display rack "ask 'em to buy." Use our *quick turnover system*. Carry endless belts for the more popular cars only. Roll belting, which can be cut to fit, for the others. You carry less stock, turn it oftener and so make more on your investment.

All Graton & Knight Fan Belts are made of fine leather. They are tanned to resist heat, water, oil and dust. Stretch little. Grip firmly at low tension. In any type—Flat, "V" or Link "V"—they give faithful, long-term service that pleases your customers.

Send in the coupon today and let us show you how easy it is to boost your fan belt business.



GRATON & KNIGHT

Standardized
LEATHER BELTING

MAIL ME TODAY

THE GRATON & KNIGHT MFG. CO., Worcester, Mass., U. S. A.

Send fan belt information:

101-G

Name.....

Company.....

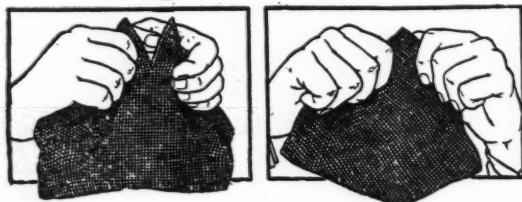
Place.....

Prices, quality for quality, 5 to 10% lower than the field
Tanners—makers of belts, straps, packings, fan belts, loco leather, etc.

GATES BELTS

"The Standardized Fan Belt"

Try this test



Take a piece of light fabric that you can tear easily in this manner—that is, straight across. Then try to tear it diagonally as in the next picture.

You find that it has double strength on the bias—a good illustration of the extra strength and durability of the bias weave construction.

Ever try tearing a piece of any fabric diagonally? You encounter double strength!—exactly why the **bias weave** construction (patented) gives the Gates Vulco Belt double durability.

Made by the World's Largest
Manufacturers of Fan Belts



Marmon Spells Success with 5 M's
Make Marmon Men Make Money

Write for information regarding the money-making possibilities of the NEW MARMON in your territory.

NORDYKE & MARMON COMPANY
Established 1851 Indianapolis, Indiana

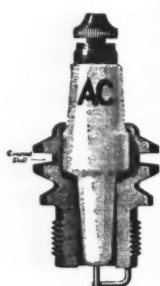


"It's a Great Automobile"



What AC Means to the Dealer

New AC Spark Plugs



A new design, new alloy for sparking points, new electrically fused Kyanite insulator core and a new glaze.

AC Carbon-proof Plugs are also made in all sizes.

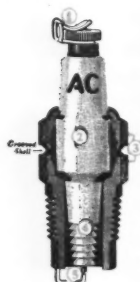
The demand for AC Spark Plugs is assured through their use as factory equipment on the following cars:

Ajax
Apperson
Buick
Cadillac
Case
Chandler
Chevrolet
Chrysler
Cleveland

Davis
Dodge
Brothers
Durant
Essex
Flint
Hudson
Hupmobile
Kissel
Marmon

Nash
Oakland
Oldsmobile
Paige
Star
Velie
Westcott
Wills Sainte
Claire

New AC 1075 for Fords



The special features of the AC 1075 make it the most desirable plug for Fords. Dealers are building a big and profitable business by emphasizing these features in making sales:

- 1 Spring Terminal Clip
- 2 Heavy Body Porcelain
- 3 Hexagon of extra length permits easy and positive application of spark plug wrench
- 4 High Temperature Fins—Patented carbon-proof Porcelain
- 5 Drip electrode forms natural Oil Drain

Made in both one and two-piece design.

DEALERS
who carry AC
products can
build a profit-
able business.

The demand is
assured because
of their use as
car equipment.

They are backed
by strong adver-
tising.

AC Spark Plug Company, FLINT, Michigan

Makers of AC Spark Plugs—AC Speedometers
—AC Air Cleaners

AC-SPHINX
Birmingham
ENGLAND

AC-OLEO
Levallois-Perret
FRANCE

AC Speedometers



The Model for Fords

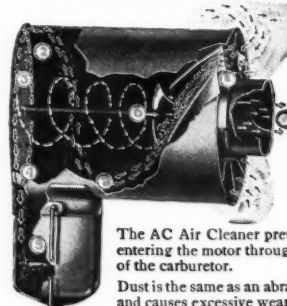
There is proof of the quality of AC Speedometers in the fact that they are used as original factory equipment on Buick, Cadillac, Chandler, Chevrolet, Chrysler, Gray, Oakland, Oldsmobile, Peerless and G.M.C. trucks.

The AC Speedometer for Fords is of the same quality as furnished the above manufacturers for their original factory equipment.

The AC Direct Drive does away with the troublesome swivel joint and insures continuously satisfactory service.

Packed complete with all attachments.

AC Air Cleaners



The AC Air Cleaner prevents dust from entering the motor through the air intake of the carburetor.

Dust is the same as an abrasive compound and causes excessive wear on all the motor's moving parts.

AC Air Cleaners are original factory equipment on the 1926 models of Nash, Buick and Oakland.

Installation is easy as it connects directly to the carburetor. Once installed it requires no attention as there are no moving parts to get out of order. Packed complete with all attachments.

Models are now ready for Chevrolet, Chrysler Four, Dodge Bros., Ford, Maxwell, Oldsmobile, Star, Studebaker, as well as the 1925 and earlier models of Buick, Nash and Oakland.